FARMCRAFT

Hundreds of

HINTS

FOR SAVING
TIME, LABOUR
and MONEY
on the FARM

SECOND
(1937)
VOLUME

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FARMCRAFT

VOL. II. — 1937

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FOR SAVING TIME
LABOUR AND MONEY
ON THE FARM

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HANDY ANDY'S COLUMN
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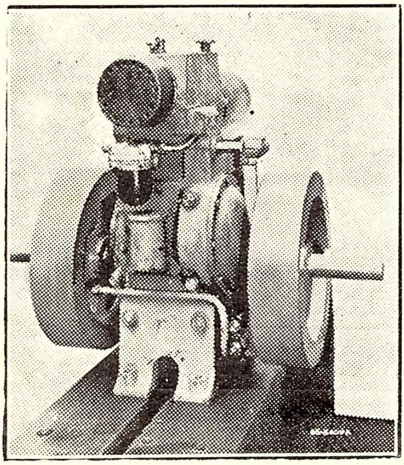

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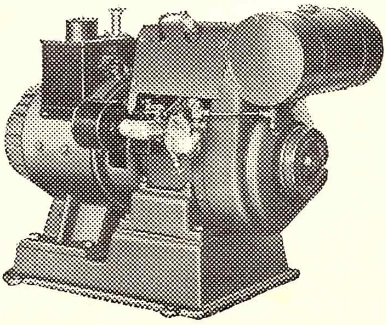

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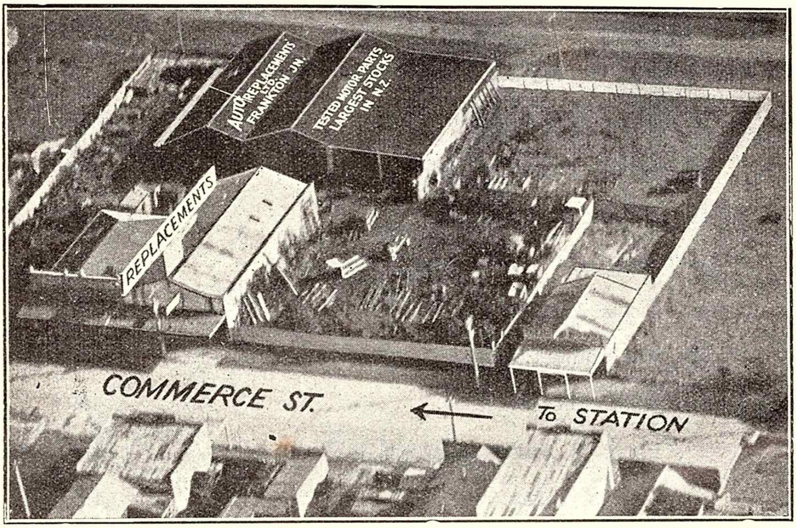
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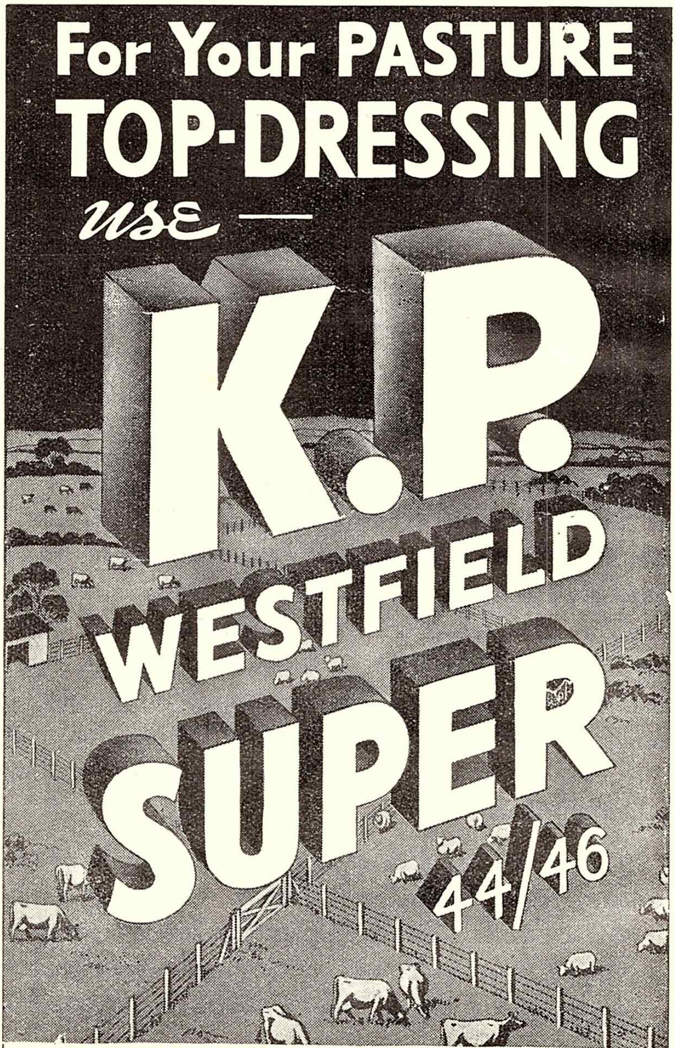
Preface

THIS, the second volume of FARMCRAFT, is published in the confidence that it will be equally as popular as the 1936 edition. Selected from Handy Andy's column in "The Weekly News," its contents have been contributed by farmers in all parts of New Zealand, and each idea has been proved in practice on the farm. Those who have the first book will find this an ideal companion volume.

It is not suggested that every hint will be new to every reader. The average farmer, however, will discover that the 400-odd suggestions form an invaluable collection of ideas for lightening the burden of the daily round, and for increasing efficiency. In such a collection, of course, he is bound to find a great deal that is actually new to him, as well as much that is novel. The items, covering the whole range of primary production, are thoroughly classified and completely indexed, and every man on the land, no matter what phase of farming he is engaged in, can reap a definite profit from them.

The publishers again wish to thank Messrs. Wilson & Horton Ltd., proprietors of "The New Zealand Herald" and "The Weekly News," for permission to reprint the material here presented, and to express their appreciation of the support given this new volume by the business community.



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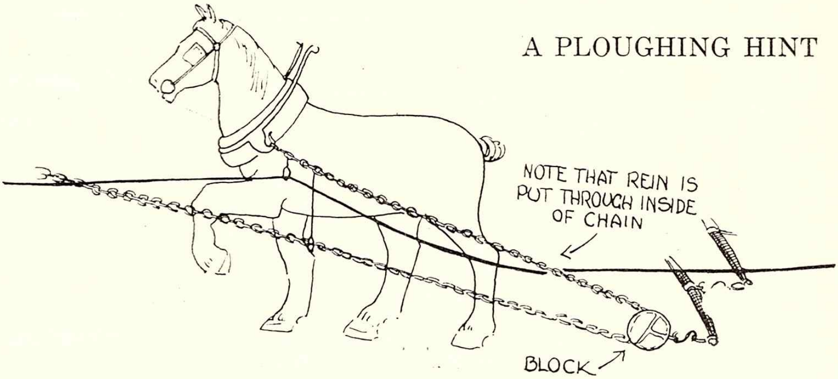
FARMCRAFT

CHAPTER I.

Agriculturalist and Pastoralist

A PLOUGHING HINT


NOTE THAT REIN IS PUT THROUGH INSIDE OF CHAIN
BLOCK

When working a four, five or six horse team in the plough, bring the plough line on the near side of the team through the inside of the back horse's chain. If it is brought along on the outside (which is the usual way) it quite frequently gets caught or pulled around the block with the chain. By bringing the rein through the inside this nuisance is eliminated, and this also allows the rein to come over the plough to the teamster clear from the land wheel where it very often gets caught around the nuts on the land wheel. Thus this inconvenience is also eliminated by following the above practice.—Teamster, Kakanui.

LAST-ROUND PLOUGHING

When ploughing the last round out from the fence with a five-horse team, the horse on the outrigger can be put on the other side of the team. Reverse the five-horse master tree end for end and put the bridle chain in the last hole on the right. This allows you to plough close to the fence where it is usually heavy going with more strength.—"Farm Hand," Kakanui.

GUARD BLOCK FOR PLOUGH

A plough frequently drags rubbish in the crook of the beam just above the mouldboard. By fitting a wooden block this trouble can be entirely overcome. The block is shaped to fit the beam, and is held in place securely by means of four nails, two on each side of the beam. A length of wire is used to tie the block and beam together to obtain additional strength. The block should have a 3in. face on the mouldboard side.—"Unohoo," Orangapai.

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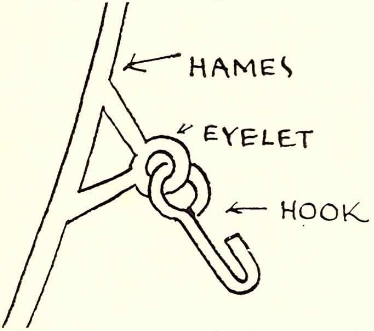
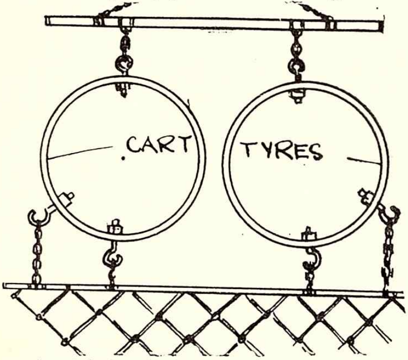
CONVERTED HAMES

On many farms there are old buggy hames lying idle. These can easily be converted into serviceable plough hames Cut the old traces from the eyelets of the hames and attach a stout iron hook. The hook is made from an iron bar of ¼in diameter, with the chain hook turned upward in the same fashion as the ordinary plough hame hook. A rubber pad is placed under this to prevent its damaging the collar. I have used this type of hames for many years, and proved them as serviceable as ordinary heavy plough hames.—F.H., Kai Iwi.



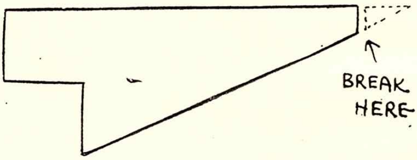
USEFUL IMPLEMENT

A useful implement for levelling cultivated land, breaking sods and spreading cow manure, can be made from two old cart tyres, joined with ringed bolts and with hooked bolts for attachments. Any handy man can make these, and with the chain harrows attached they will do splendid work.—J.S., Collingwood.



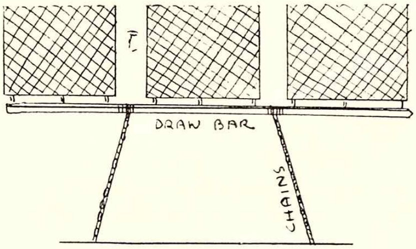
HILLSIDE PLOUGHING

(1) If, when ploughing a stony paddock about ½in. is broken off the point of the shares, it will be found that they are far less liable to a more serious breakage. (2) When swivel skeiths are set with an inclination to land for hillside work, it is often found difficult to tighten the cone collar stud sufficiently to hold the skeith in such a position If a flat is filed on the skeith stalk at a place where the stud grips the stalk, it will never shift. (3) When ploughing with a tractor the following will be found a good way to secure the plough's lift rope to the tractor Instead of tying the rope direct to the tractor, interpose between the two a light drag spring. Adjust the length of rope so that it is just tight when the tractor and plough are on level ground. When the tractor goes over a bump the spring will stretch. At all times there is no slack rope to pull in before lifting the plough.—"Furrow," Hastings



A TANDEM HITCH

It is often necessary to pull a set of harrows behind some preceding implement. In order that the harrows should follow the first implement on sidings and round corners, it is necessary to pull them from two centres—not the usual one—with the two draught chains having an outward inclination, as in the illustration.—A.C.C., Hawke's Bay



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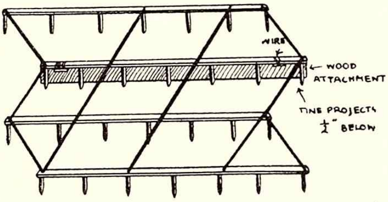
SPREADING HARROWS

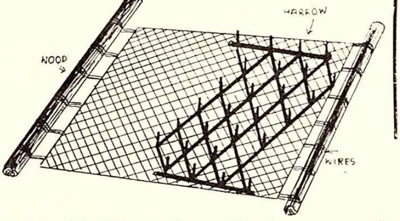
When harrowing grassland, the animal manure on the surface will be broken up and more evenly distributed over the surface if a stout board, such as is shown in the diagram, is suspended behind a row of tines. The lower edge of the board should be approximately half an inch above the points of the tines. Greater penetration of the harrows will be secured in hard ground by wiring a length of 4in. by 2in. to the top of each leaf.—F.S.H., Featherston



Get piping of the length required and saw down the ends with a hacksaw. Next get a cold chisel and hammer it into the split ends to widen them. Heat each end and insert a link of the chain, after which hammer the edges together. These spreaders are everlasting and just as easy to make as wooden spreaders. — J.H., Mitimiti.

EFFICIENT HARROW

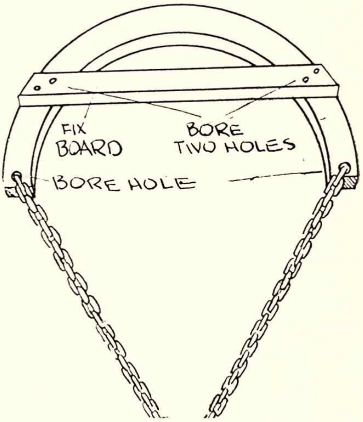
To make an efficient harrow for spreading manure, take two stout manuka poles 8ft. long, a piece of crate wire of 3in. mesh and 7ft. square, two leaves of tripod harrows, and a fair length of bailing wire. Fasten one pole to the crate wire about every 9in. with bailing wire, and leave about 6in. between the pole, and wire to allow for play. Then take the other pole and lay it just on top of the end of the crate wire and bind tightly. Then lay the two leaves of the harrow (with points upwards) along the back pole. This harrow will spread the animal manure as far and efficiently as any expensive grass or chain harrow, and has the advantage of being easy to be put in the dray by one man.—Economist, Kaikoura.



KEEPING HARROWS CLEAN

This device consists of a round post to one end of which is attached a short length of rope. The harrow is driven over the post, which clears it of grass and clods. The faster the team is walking the better the effect. As soon as the harrows are clear of the post, halt the team and pull the post out to a position where it will catch the harrows on the next round. One or two posts should be used, according to the size of the paddock and condition of the pasture. —E.P., Palmerston North

FOR RAKING MANURE

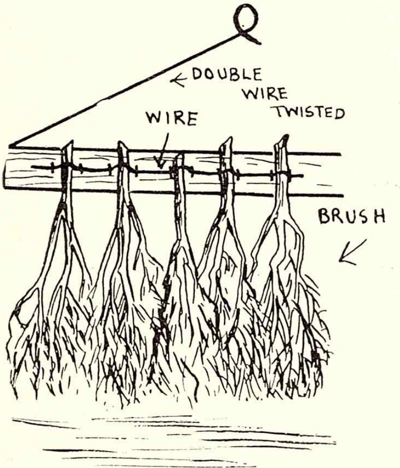


Here is a useful device for raking manure off paddocks. Take an old cartwheel and cut it in half. At both ends bore a hole and also bore two holes at the back. Now fix a chain and swingletree where you cut the wheel and it is complete. If preferred a board can be fixed to the back for weight.—Haka, Nelson.

SUCCESSFUL INVENTORS PATENT THEIR INVENTIONS — What About You? — See Page 144.

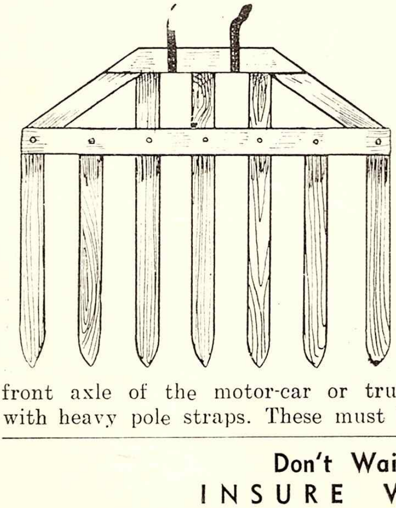
BRUSH HARROWS

To make a good brush harrow for covering grass seed, take a 4in. by 2in. rail and some manuka or other brush. Wire the brush on to rail as illustrated, and fasten double wire on to each end for the S hook to grip. Go over the ground after the seed has been sown. This light harrow is effective, and can be drawn easily by one horse.—Pony.



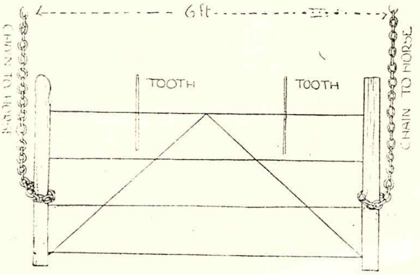
MOTOR HAY SWEEP

This hay sweep works well on smooth hay paddocks. It is attached to the front axle of the motor-car or truck with heavy pole straps. These must be buckled as tightly as possible or the front wheel will scrape on the sweep. Carriage bolts should be used at every place where the prongs or stays cross, and the nuts should be screwed up on the underneath side or they will hold the hay on the sweep when you back away from stack to unload. The points of the seven prongs are sharpened from bottom and sides. Cross bars must be in pairs, i.e., both above and underneath the prongs, and should be bolted right through. The hay can be swept from cocks or left in windrows. This sweep will pick it up cleanly from both. —M.A.E., Wakefield.



GATE AS HAY-SWEEPER

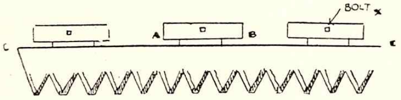
Lay a gate—a thin one for preference—flat on the ground, hinges uppermost. Tie a plough or snig chain on each end, about halfway down, and nail two pieces of board under the gate to act as teeth. Use two horses, tied about 6ft. apart. Standing on the front of the gate, drive into the hay heaps and let the hay push the driver back. Most of the hay is pushed in front of the sweep. When there is as much as the horses will pull, drive to the stack, lift the back of the gate, start the horses and the gate will topple over the heap of hay. Right the gate and start again. I have used this method with the same gate for six years, doing 20 acres a year. I can trot the horses in level paddocks, and do two acres an hour.—H.A.Y., Masterton.



Don't Wait for Flame —
INSURE WITH F. A. M. E.

ADJUSTING THE MOWER

Very few farmers seem to realise that the whole efficiency of a mower depends upon the adjusting of the knife. On the upper surface of the knife-holder will be found a series of steel blocks on which the knife slides and which must be plumb. That is, line AB with CD. The adjustment of these blocks can be altered with bolts provided for that purpose so that they fit tight and close to the blades, but they will seldom be correctly placed, even when the machine is first bought. Not even the agents seem to know this. Even if correctly adjusted at the beginning it is necessary, for smooth running, to reset these after the first wear. Irregular blocks cause rapid wear, a loose rattling knife, and extra stiffness, especially when these spaces become filled with dirt and rubbish. To tighten AB with CD, loosen the bolt blocks X and tap up at Y.—K.H., Puketapu

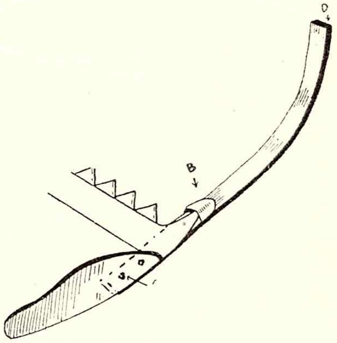


SHARP MOWER KNIVES

I have fixed my mower grindstone to a block in my engine-room and by making a wooden pulley out of 4in. pieces of timber, cut round and held together by four bolts, which pass through the spokes of the engine wheel, which was turned by the handle, I can sit on a box and sharpen mower knives in a jiffy. Mower grinders are supplied with a flat stone also, and by changing stones, the axe can be ground without any hard work. An old belt was cut to the right length.—E.S.K., Kiritaki

MOWER ATTACHMENT

This attachment saves much heavy labour and time, and makes a perfect job. All that is needed is a bar of iron about 4ft. long, ½in. thick, and ¾in. to 1in. wide. Curve the iron as illustrated so that one end will be above the crop to gather under. Bore three holes through the bar: two toward the end for countersunk bolts to attach to the outer shoe of the mower bar, and the other sideways immediately at the point of the outer finger. Rivet a small cover to the bar through the hole on the side, so as to slip over the point as in diagram. This will stop any grass getting between the point and the bar. The bar is bolted to the underneath of the shoe through holes that may have to be made on some makes of machines. This attachment will enable a perfectly clean cut in tangled, heavy crops that have gone down.—T.D.R., Motueka.



REMOVING MOWER KNIVES

When removing sections from mower or binder knives, the following method is quick and simple and quite effective. All that is needed is a hammer and something solid to take a blow, if an anvil is not available. Place the back of the knife on this, with the blades over the edge facing downward, and strike the blade to be removed opposite or above the rivet. One or two good blows over each rivet will do the job, the blade shearing its own way off.—T.D.R., Motueka.

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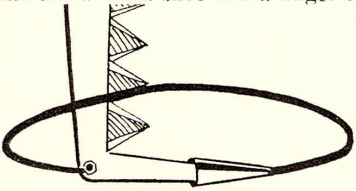
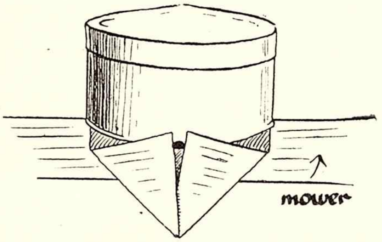
ATTACHMENT FOR MOWER

An attachment to the mower which will lift hay which has been " laid " by wind or rain, and leave the track clear for the following round can be simply and cheaply made from a ½in. length of round iron rod On one end of the rod a small shoe like a finger-stall is welded on to fit over the point of the " shoe." From here the rod is carried in a curve 18 inches forward and then carried at the same height back, where the other end is attached with a stout bolt to the swathe board. This attachment proved most effective in a heavy fallen crop on my farm recently.—E.S.K., Dannevirke.



SELF-OILER FOR MOWER

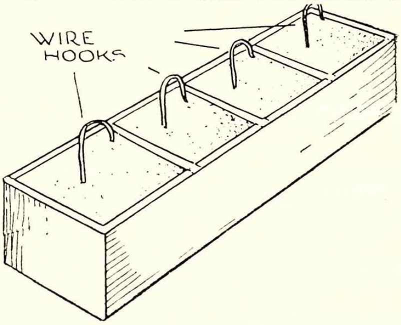
The articles needed are: 2oz. tobacco tin, one flat piece of tin, a 3-16in. bolt and a little wool to put in the tin. Bend two corners of the flat tin as shown, punch a hole in the tobacco tin centre and a pin hole in the bottom edge for the oil to leak out. Bore a ¼in. hole in the casting on the mower known as the inner shoe-hinge. Then fasten tin and oil guide on the casting by means of the bolt, as shown. The pointed end of the flat tin should then be bent down over the side of the casting. Half fill the tin with wool to absorb some of the oil poured in. The flow can be regulated by the size of oil hole or the amount of wool in the tin.



This idea minimises the wear on the knife head and will keep the knife head oiled for a considerable time.—B. M.M., Timaru.

CONCRETE STACK WEIGHTS

At harvest time there is often a shortage of stack weights. By making a mould of boards, partitioned as illustrated, a number of concrete blocks may be made. When making these for weights a hook of steel wire should be embedded in the concrete, these being used to fasten the weights to the tie-wires. These weights are easy to handle, are uniform in weight, and last indefinitely.—" Teamster," Timaru.



MEASURING STACKS

Many farmers have only a hazy idea as to the weight of hay in the stacks on their farm, but fairly accurate estimates can be made by the following formula:—The weight of hay varies from 1cwt. to 2½cwt. per cubic yard, according to the time the stack has been settled. By multiplying the area of the base by the height the cubic content of the stack is estimated. In the case of a circular stack the area of the base is found by squaring the circumference and multiplying the result by .08. The area of the base of a square yard or rectangular stack is found by simply multiplying the length by the breadth. Most stack tops are in the form of cones, or prisms, so a small additional calculation must be added. Below is given a chart of the weight of hay in the following condition:—
Not well settled, 12 cubic yards per ton.
Well settled, 10 cubic yards per ton
Compact, 8 cubic yards per ton.—"Constant Reader," Ward.

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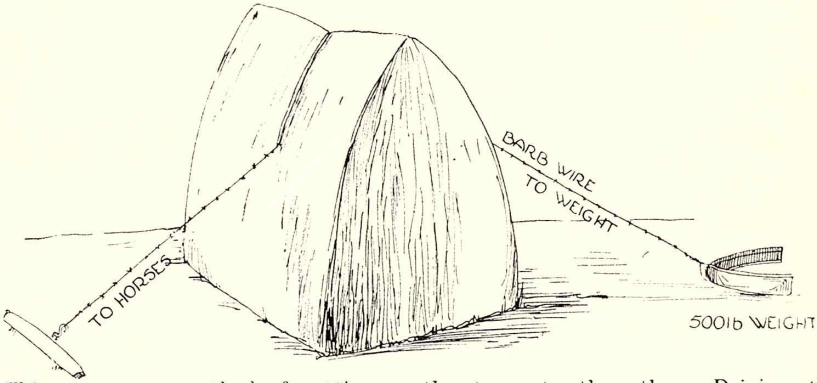
CUTTING THE HAYSTACK



This is an easy method of cutting a haystack in two. About 1000ft. of barb wire, a 500lb. weight, and a team of horses hitched to a double-tree are used for the job. The weight is attached to one end of the wire and the team to the other. Driving the team forward will cause the wire to saw straight down, through the stack. If one cut is not enough the positions of the weight and team are reversed and the process is repeated.—W.K., Tauranga.

HEATED STACKS

Sometimes, on account of the weather conditions, hay has to be stacked before it is properly dry, with the result that internal combustion takes place. The following cheap methods lessen this danger considerably.

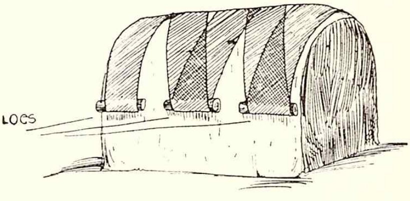
(1). A length of pipe is taken, slightly longer than the stack and drain pipes are strung along it. This is placed along the centre of the stack when about half the paddock is in.

(2). Take two pieces of 12 x 1 inch board, slightly longer than the stack. Along each side of one nail pieces of 4in. x 3in. Do not use pieces longer than 18 inches and leave gaps between them of three inches. Now take the other length of board and nail on top of the 4 x 3's. There is now a long funnel about 6in. x 4in. with openings on either side every 18 inches or so. This should be laid along the stack when about half the hay is in.

(3). Take bundles of teatree sticks and place across the stack so as not to interfere with the winter cutting out. This also provides a good means of letting the heat out—T.L., Te Puke.

NETTING STACK COVER

The greatest difficulty in building a hay stack is to put a top on it that will shed water properly. This year we built our stack as usual and when we had put on the top we used ordinary sheep netting, laying it over the top of our stack from side to side and weighing it down with logs in the manner shown. By zig-zagging it backwards and forwards we in no way harmed the roll of netting, and its effect of compacting the outer lay of the roof has kept out the heaviest rain. Wire netting does not keep the heat in and cause the stack to sweat as sacks and other covers do.—J.G.H., Wanganui.



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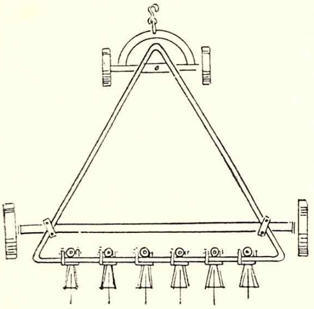
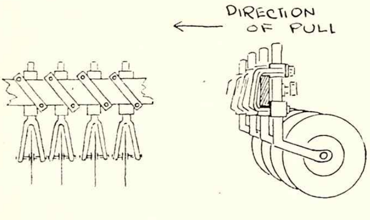
WORKING TWITCH LAND

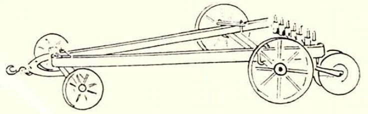
Many farms have a certain amount of browntop twitch which is hard to eradicate except by ploughing, grubbing and harrowing. As often as not a farmer ploughs, then cross-ploughs, the resultant chunks of twitchy sod being really more than the grubber can manage.



This implement eliminates the cross-ploughing, saving valuable time, and at the same time making the paddock workable for the grubber, and does not cut up the twitch as disc harrows do. It also makes it easy going on grassland by first crossing with the machine the direction it is intended to plough. Almost every farmer has the material in his own yard in discarded implements.



An old grubber frame is the best base for the skeiths to work on, as you have a lift for travelling without taking the skeiths up. The materials needed are one grubber frame and as many old plough skeiths as you can fit on about four inches apart. (The best working width.) If there is no grubber frame handy a piece of bent iron of the required length can be procured with a fore-carriage in front as in the illustration. The depth required is regulated by raising or lowering the skeiths below the back wheels. A sack or so of earth will make them cut four to five inches deep in hard grassland. Four horses can pull 12 to 16 skeiths with ease.—J.G.L., Darfield.



BINDER BATTENS

Broken binder canvas battens can be quickly repaired by freeing the canvas for six inches on both sides of the break. Now cut an oblong piece of tin—roofing iron hammered out—about eight inches long, and wide enough to go round the batten. The tin is laid between the batten and the canvas, the break being in the centre. Now bend up one side of the tin and securely tack it in the centre of the batten on the top side. While resting the batten on the bench, hammer the tin round until the free edge meets the tacked side. Trim the tin with the snips so that both edges meet, taking care the tin is wrapped tightly around the batten. This edge is now tacked. The job is completed by tacking the canvas over the repaired batten. This repair, when well done, equals the strength of a new batten. The idea is also very useful in repairing a broken fan blade on the binder reel.—Harvester, Hororata.

SLIPPING BINDER CANVAS

In harvest time a very common delay with the binder is caused by the slipping of the canvas. A simple remedy for this is to tack strips of an old car tube on the edges of the canvas. This, as well as stopping the canvas from slipping, strengthens them also —"Good Advice," Canterbury.

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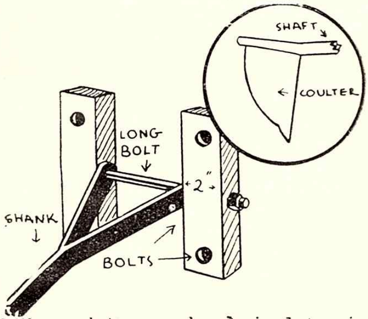
DISTRIBUTING MANURE

Difficulty is often experienced in distinguishing the wheel mark when working a manure distributer on hard ground. This device will save much "doubling" and missing. Remove the coulter and its shank from a seed drill and attach as shown in the diagram. The shanks of most seed drills are made on the same principle and can be attached in this way. Two attachments would be necessary if the country is hilly and it may be desired to circle the field either to right or left, in which case the coulter and shank could be removed to the side desired simply by undoing and removing the long bolt. This makes a good mark and is easily seen in any angle of light. If pasture comprises sod-bound paspalum the coulter can be weighted with pieces of iron.—F.D.W.H., South Head.



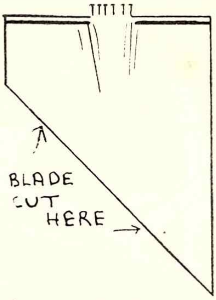
CUTTING MAIZE

Instead of the very slow, laborious job of cutting maize for green fodder with the reap-hook, use the mowing machine. It cuts maize as well as it does hay. Although maize stems look thick they are not tough. It is necessary to pick up the fallen maize before going round a second time.—K H., Puketapu.

TURNIP PULLER

To make a cheap turnip-puller out of an old hay fork saw out the middle prong (if there are three) and then heat the remaining two until red and bend in until about two inches apart. Now heat again and bend the prongs into a figure C and saw off to the required length.—Regular Reader, Norsewood.

ENSILAGE CUTTER



If you have a broken spade do not throw it away. Just cut as in the diagram. Sharpen it up and you have a serviceable ensilage cutter.—A.C.D., Hawera.

DIGGING POTATOES

Take the back tine off the skimmer one uses for moulding up potatoes and just leave the two bare tines on each side. Then set the tines with the lever so that the back tines on each side scrape along just by the row of potatoes, leaving a ridge about 9 or 10 inches wide. It might scratch a few out but one can go along and pick these up.—B.C.N., Korere.

POTATO MOULDING

When moulding potatoes with the horse hoe it is often very difficult to get down deep enough with the ordinary hoes. A good way to do this is to get five old fingers off a mower and break the guards off them. Next sharpen the points on the emery wheel and fasten the fingers to the hoe as illustrated. These will loosen the earth up enough for the moulders to go deep in.—"Wise Owl," Mahakipawa

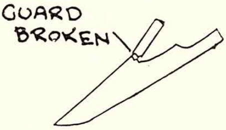


FIG 1.

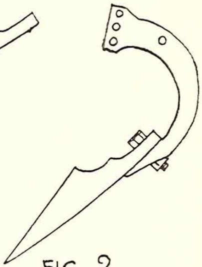
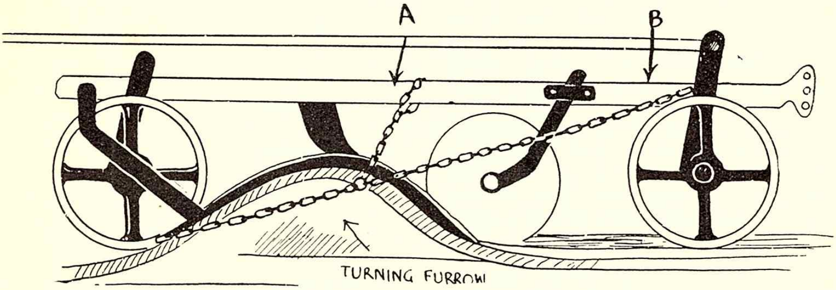


FIG 2.

PETONE "HOSPITAL" BLANKETS —
Weight, Texture, Size, Colour and Value Unequalled.

PLOUGHING IN TALL GROWTH



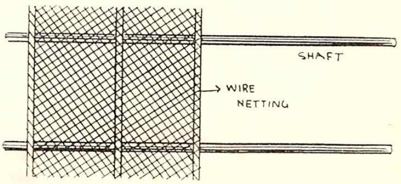
In this the "A" chain is the "worker," and it is the point at which this chain joins "B" chain that will determine the completeness of the cover given by the furrow. This again is determined by the height of the scrub or crop. If it is tall then the point of contact with "B" chain must be moved forward toward the head of the plough till the right place is found and the foliage is completely covered. If very tall then it may be necessary to move forward the point at which "A" joins the plough beam. The best join is a split-link. You thus avoid catching the foliage, which would occur with a wire join. At least 2ft. of "B" chain should run under the furrow.—F.D.W.H., Mt. Roskill.

VENTILATED STACK

An idea which enables the hay to be carted in soon after cutting, thus retaining much of the goodness which is often dried out, is described as follows:—After the stack bottom of rough wood or brush has been built up, place drain pipes so that they will act as a channel for air. If the stack is small, one vent only will be necessary, but for larger stacks two and even three will be wise. Allow the first pipe to protrude far enough so that the hay will not settle over the end to stop the air. Place the pipes in from one end and then out to one side to catch the draught. Fill bags with hay and stand at the gaps left in pipes so as to make chimneys in the hay. Tie tightly to top of each sack a piece of rope about 3ft. long, with a loop at the other end. Stick a short pole, with a forked end if possible, into the sack of hay like a mast, and place the loop in the fork at the top. If stacking with pile and boom or stacker, just place the hook in the loop and pull the sack up to the surface each time when necessary, otherwise use the mast by pulling out and putting through the loop, and in this way two can easily pull up. These vents will allow steam to escape without any fear of over-heating. When steaming has quite finished, it is wise to block the ends of the pipes, but if much draught is wanted in the early stages, place a sheet of iron at both ends so that it will always be in position to act as a draught guide from whichever way the wind is blowing.—I.D.R., Motueka.

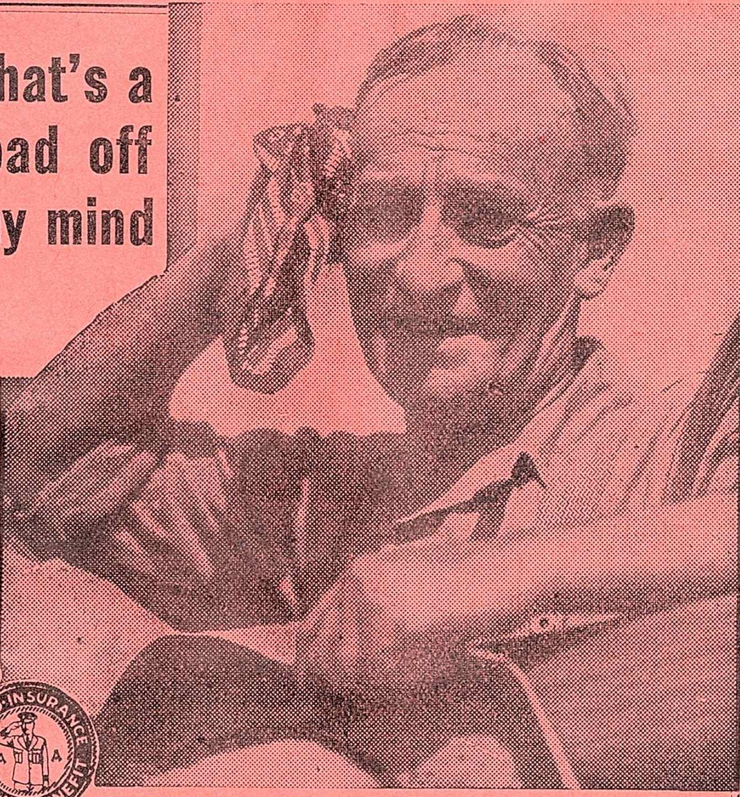
HANDY HAY SLEDGE

A handy hay sledge which saves a lot of time can be made from two light poles 11ft. long and three cross-sticks spaced 2ft. apart, as shown in the illustration.



DELAY IS DANGEROUS —
Get Reliable Advice About that New Idea — See Page 144.

That's a load off my mind



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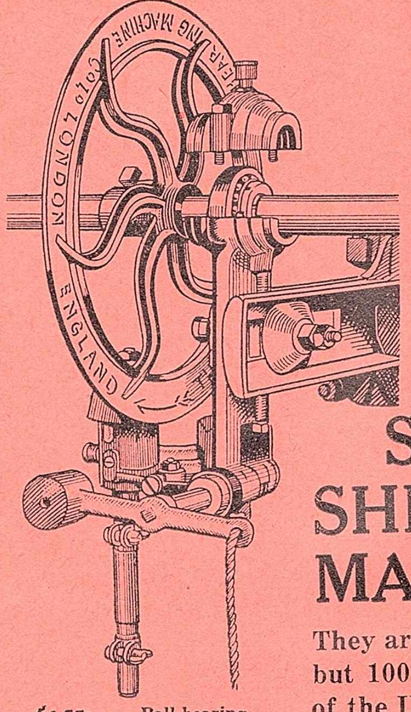
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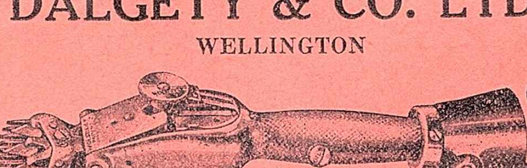

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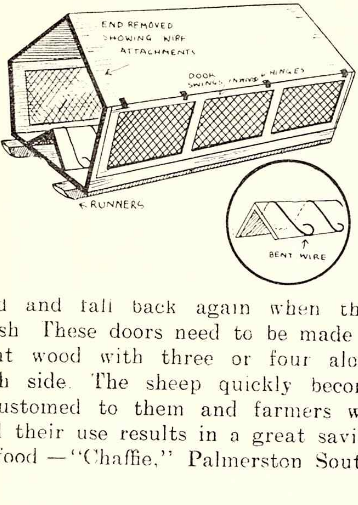
CHAPTER II.

HINTS FOR THE SHEEPMAN

IMPROVED SHEEP-FEEDER

With the winter approaching, a hint on sheep-feeders may be of help This diagram illustrates the use of wires placed at intervals over the V inside the feeder to prevent the chaff blocking. Touching these, the sheep shake down the chaff.

The bird wire-netting doors, hinged on top. are pushed in when the sheep feed and fall back again when they finish These doors need to be made of light wood with three or four along each side. The sheep quickly become accustomed to them and farmers will find their use results in a great saving of food —"Chaffie," Palmerston South.

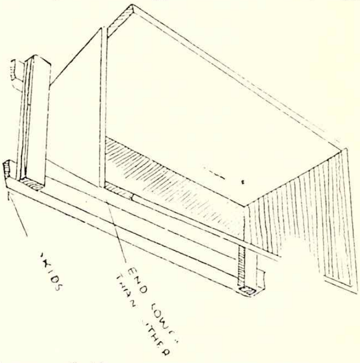


BRANDING FLUID

When black paint, tar, etc., runs out, and there are wool bales still to brand, try this. Mix soot with linseed oil and apply with a paint brush. It makes a jet black brand which does not "run."—"Mother Farmer," Hora Hora.

SHEEP KILLING CRADLE

Damage to the wool through coming into contact with mud, blood, manure etc., can be avoided when killing sheep by using a killing cradle. The chief features of the one I have used for 20 years are as follows:—The top 4in. board at one end should be 4in. lower, to enable the sheep's head to hang down and bleed well. The two bottom 3in. by 2in. runner ends are bevelled at each end, so that the killed sheep in the cradle can be pulled easily to where the gallows are.—"Hicks Bay," East Coast.



HOOP-IRON TIES

When using a temporary hurdle a good fastener can be made from the hoop-iron which comes round the bales of bags and wool-packs. Cut off the length required and make a loop for the pin. Fasten the iron as it was round the bale of bags. This ties the hurdle firmly to the post and is much stronger and yet easier to remove than wire.—L.P.M., St. Andrews.

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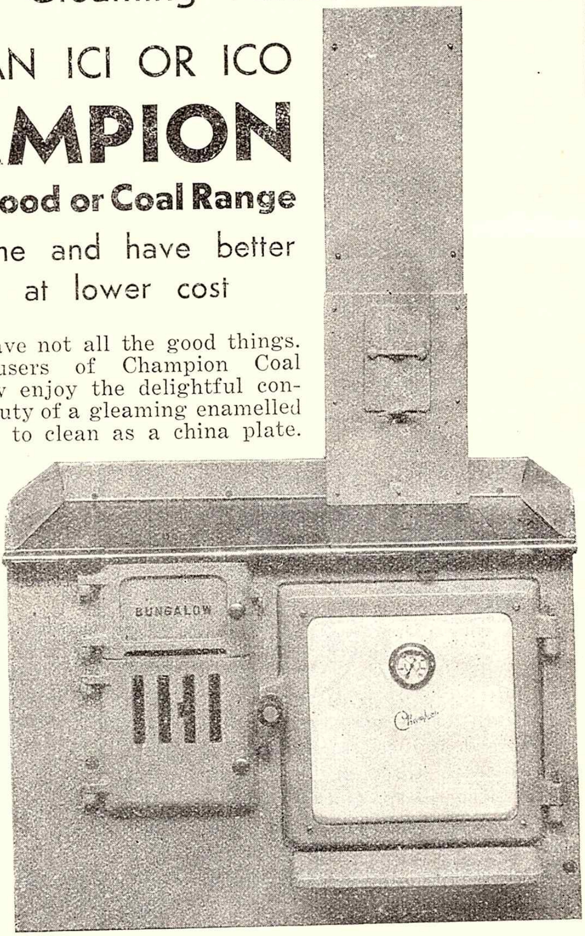

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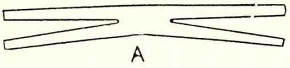
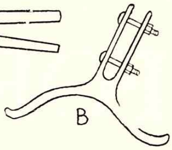
DOSER FOR SHEEP

An excellent doser for sheep can be made from a piece of iron piping half an inch in diameter and eight inches long. It should be open at one end, the other end being plugged with a cork or some suitable material. To use it one should hold it in his right hand, so that the open end is pointing upward. Drop the number of pills required for one sheep into the pipe, catch the sheep's lower jaw, and prevent it from backing with your knees (they should be in a crush pen beforehand), push the open end of the doser about three inches down the animal's throat, then tip the pipe up so that the pills roll down into the sheep's throat. The end of the pipe must be smooth, so that it will not hurt the sheep. I know of stations where this method has been used for years. It has been found thoroughly satisfactory, two men doing several thousand per day if necessary. Capsules of a sticky nature should first be rolled in flour so that they will slip down the tube.—"Shepherd," Wairoa

DIPPING CRUTCH

An old rasp makes an excellent crutch for dipping sheep and can be made by a blacksmith in a few minutes Split the rasp and bend two pieces up.





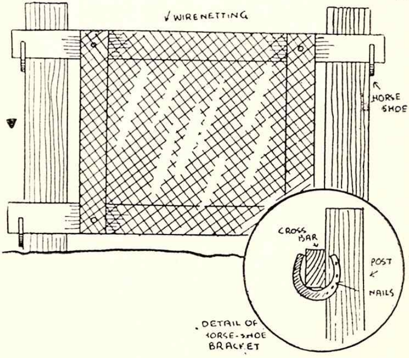
Flatten and punch holes for bolting to handle. Shape the other two pieces as in B.—P G. Gisborne

TO CARRY BLUESTONE

Bluestone cannot very well be carried around the station in tins as it will rust them, while boxes are sometimes too awkward. A good container can be made from a length of old car tube. It is easily carried and also keeps the bluestone dry in all weathers.—W.B.S., Wairoa.

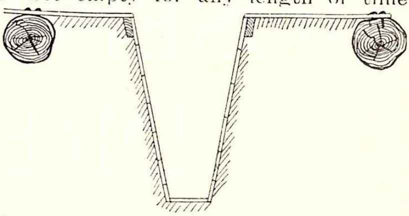
IMPROVED SLIP RAILS

When putting sheep through ordinary slip rails much time is lost in putting the several rails up and down A handy device is illustrated which is much better than the slip rails and much cheaper than a gate The materials required are a strip of wire netting, some old horseshoes. and some lengths of timber The horseshoes are nailed to the posts (with horseshoe nails) to receive the projections of the rails The actual hurdle is made by stapling the wire netting firmly on to a board frame and putting a cross piece on to ensure firmness —"Slip Rail," Wellington.



STAYING WOODEN DIPS

In the "backblocks" the long type of swim-through dip is still sometimes built of wood In time the pressure of the earth causes the sides to bulge toward one another, especially if the dip is left empty for any length of time.



To overcome this tendency battens are sometimes fixed across the top of the dip at intervals, but they act as an obstruction. A better way is to anchor the sides of dip by means of ties to heavy logs sunk in solid ground and some distance back from the dip as shown in the diagram.—J.E.D., Palmerston North.

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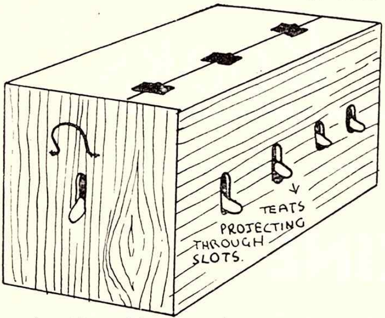
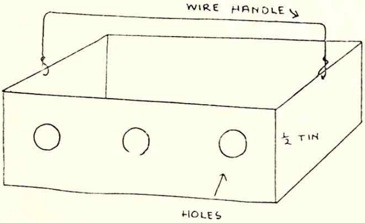
FEEDER FOR LAMBS

This feeder has been well tested and found to be a simple but practical idea. Get a box about 3ft. x 18in. x 18in., put in a shelf about 9in. from the bottom. and make five slots about 3in. x ½in. in the sides as shown in sketch. Bottles of milk with teats attached are put on the shelf with the teats through the slots. By using this device many lambs can be fed at once.—X., Takaka.

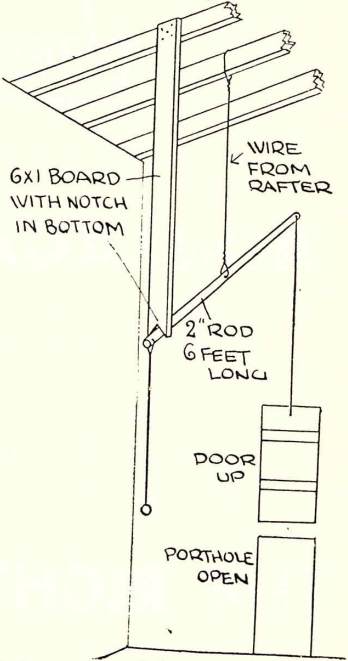


Here is another hint on feeding motherless lambs. Take a half benzine tin cut lengthways, and cut three holes in the long side, as shown in the diagram. Fill the bottles and place in the tin with the necks and teats protruding through the holes. A wire handle serves to keep it in place on the fence. This is a great help where there are a lot of lambs.—W.D., Havelock North.



SHEARING BOARD DEVICE

A good way of raising and lowering the door of the porthole on the shearing board is to take a six-foot round stick, two inches thick, and fasten a good wire to the centre. Hang it three feet down from the rafter, a good three feet out from the wall, straight above the porthole. Fasten another good wire to one end of the stick, and on to the top of the door, with the stick on the angle shown. Fasten a cord on the other end, and let it reach down to about six feet from the floor. One can have a nail by the corner of the porthole door, and hook the cord on to hold the door up, or one can hold the cord while the sheep go out.



A more complete way is to nail a six by one down from the rafter five feet out from the wall with a V notch cut in the bottom, as shown in the diagram, to rest the end of stick in, and the door will be held up if a man has a bad sheep to put out. I have been on shearing boards for over 45 years, and have never seen a handier let out.—F.H.R., Seddon.

HANDLING SHEEP

To easily and safely cast a ewe in lamb, or other valuable sheep, the following method can be recommended:—If standing on the left of the sheep put the left hand on its nose and with the right hand take hold of the left hind leg. At the same time twist the head to the right and pull the hind leg up under the belly and the sheep will be sitting at your feet. If standing on the right of the sheep reverse the action.—A.F.E., New Plymouth.

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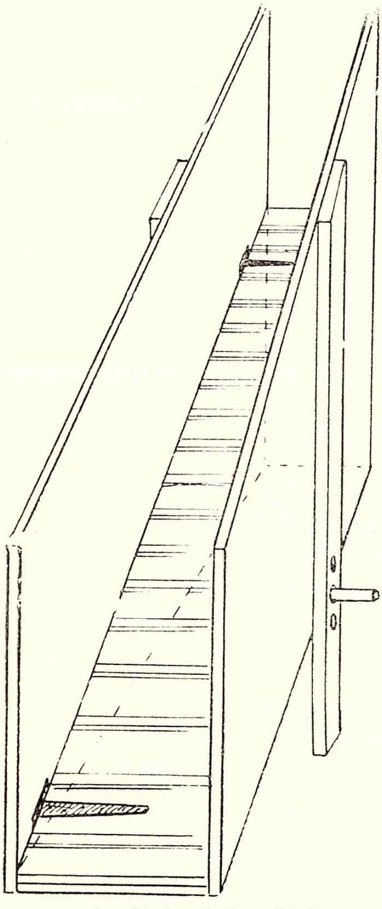
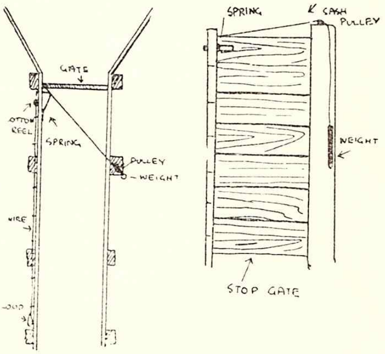
ADJUSTABLE RACE

Here is a race for loading sheep from a yard into a lorry which I consider is out on its own. Two posts about 8 feet high and 15in. apart are erected 10 feet out from the yards on a flat piece of ground. Holes to take a piece of 1in. piping are bored through each post about 2in. apart for the race to sit on. The pipe can be moved to any hole, according to the height of lorry. Now, the race should be 3 feet high at the yards and 6 feet at the other end. It is fitted with a false floor, hinged to the side near the floor at the yard end and half-way up the wall at the lorry end. When sheep are running into the bottom crate the false floor can be swung up against the side and fastened with a wire hook. When ready to fill the top crate, let the false floor fall down till it is level across, when it will be held by a board nailed on the opposite side to the hinges. One inch by half-inch boards nailed to the floors of the race about every 12 inches make a good grip for the sheep's feet.—"Farmer," Martinborough.



DRAFTING RACE GATE

Make an L-shaped spring out of a piece of wool-bale binder. Drill two holes in the long end and one at the end of the short arm. Bore a hole in the side of the race high enough up to clear the sheep and fasten the spring to the side of the race with screws, leaving the short end projecting through a hole you have previously bored in the side of the race. Fasten a light wire to the short end of the spring and take it along the side of the race to within reach of the man at the drafting gate.



Fasten the wire loosely to the race with batten staples and connect to a handle made of telephone wire. To keep the race stop-gate shut, push it back behind the spring. Fix a window sash pulley to the top of the post on the right-hand side of the race, and attach a length of sash cord with a weight on the end to the race stopgate, passing it through the pulley on the post. To open the gate, pull the handle near the drafting gates. This releases the gate, which is then pulled back flush with the side of the race by the weight attached to it. Keep pulley and gate hinges oiled.—Nila, Gisborne.

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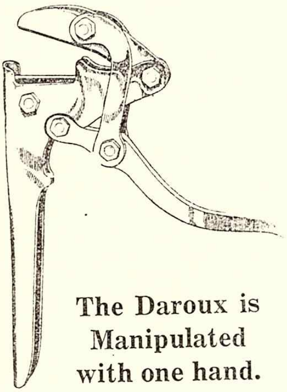

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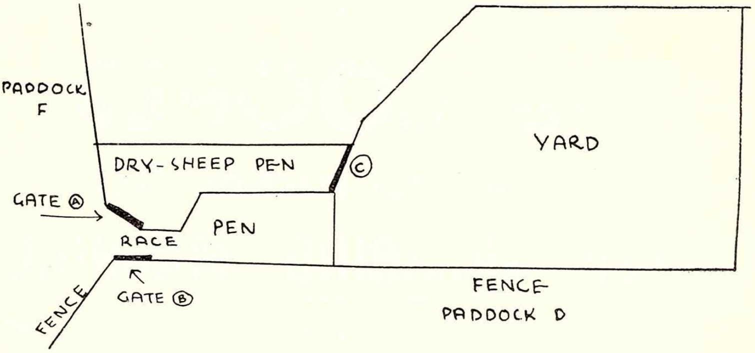
BETTER DOCKING YARD

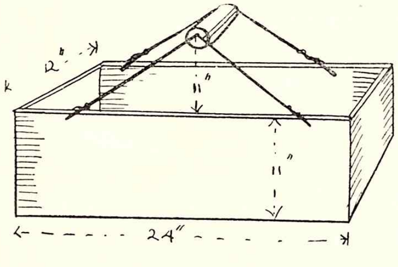


The unique feature of these docking yards is that the race is collapsible, being made of two hurdles. For yarding the paddock D, the netting C is removed, the race is pulled out to make a wing, and lengthened by gate B, while gate A is fastened on to the strainer of gate B. This makes a wide entrance and does away with yarding through a narrow gate or pulling up the yard fence. For docking paddock E the netting of the dry-sheep yard is put across the corner of paddock F. For docking paddock F the lambs are allowed to run out through gate A.

This arrangement is simple in construction and manipulation and excellent in practice. It is adaptable to two or four paddocks as well.—G.M. Poverty Bay.

SMOKE-HO BOX

A suitable receptacle for carrying "smoke-ho's" to the woolshed, etc., is illustrated in the sketch. The box used is a soap and candle one, but any similar box will do. The handle may be a piece of pipe or hollow bone, and No. 8 wire is used. This box is capable of carrying lunches for up to 12 men. My box has been in use for seven years. which proves its durability.—J.O.H T., Hakataramea



BALING SHEEPSKINS

A good method of baling sheepskins is to place the required number for a bale, wool side down on the floor of the shed. Put them head and tail with the hind legs of one up to the front legs of the one underneath. This will make a longer but neater bale. Have a wire fastened to each side of the shed about 2ft. high and to one of these wires fasten another piece long enough to go right round the bale and connect with a wire strainer and the other fixed wire. One man stands on the bale and the other strains up until tight. The first man then twists the bale round three or four times under the wire, the second man letting go enough to avoid breaking the wire. Cut off the ends about one inch long and bend over. Repeat on the other end. The wires should be No. 7, spaced one third of the way along the bale. Put newly shorn skins top and bottom and put the top one wool side out.—Bushie, Frasertown.

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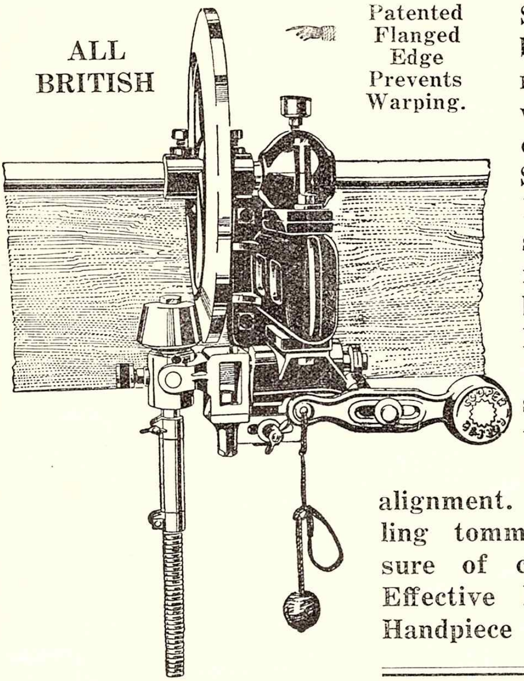

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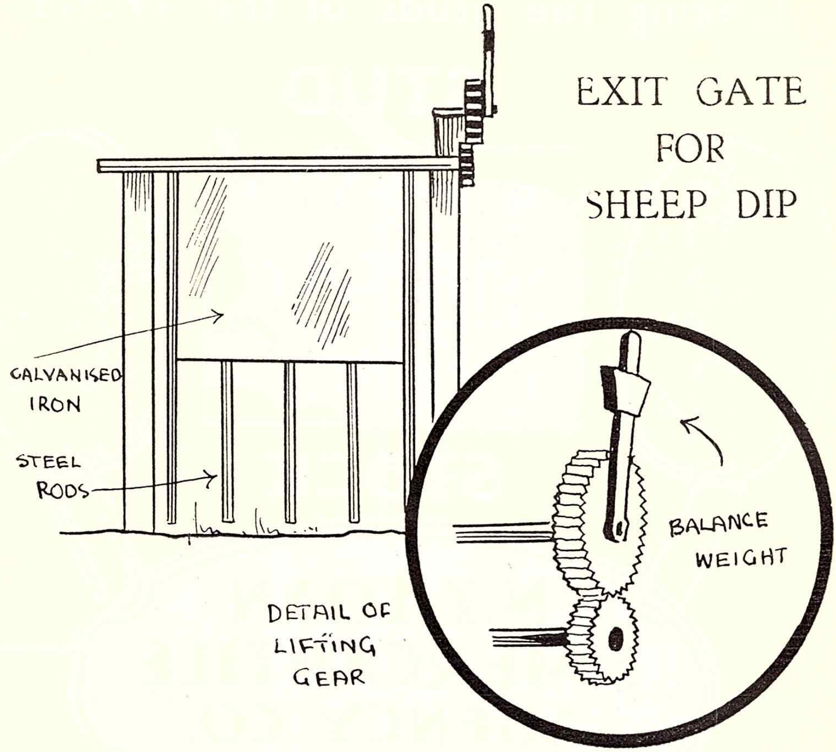
EXIT GATE FOR SHEEP DIP



A common type of exit gate on small sheep dips is that which swings up out of the way. In some ways this type is superior to the "lift" type of gate, but it suffers from the disadvantage that a big movement of the handle is necessary to open it. If two old gear wheels of about a two to one ratio (old timing gears out of motor-car are excellent) can be obtained, it is an easy matter to arrange the gate as shown in the sketch. The balance-weight is important for easy working.

With this arrangement the gate can be fully opened with only half the movement of the handle, and what is perhaps even more important, it can be opened or shut twice as quickly.—J. F. D., Palmerston North.

IMPROVISED WOOL HOOKS

Take an old broken hay rake tyre, cut off the required length and bend into shape after heating in the forge. Flatten one end and, when still red-hot, burn a hole through a short piece of round timber. This will ensure that the hook fits tightly into the handle. Place a washer over the end of hook protruding through the handle and rivet it. Be careful to let the hook cool slowly, or the temper will be taken out of it and it will be useless. This is a proved idea.—W.I.M., Waipukurau.

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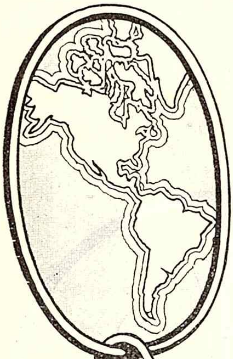

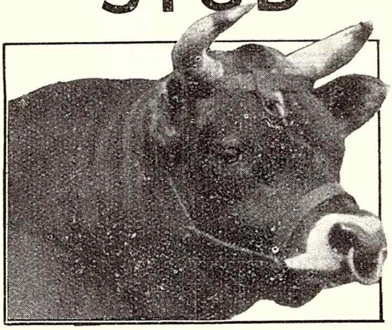

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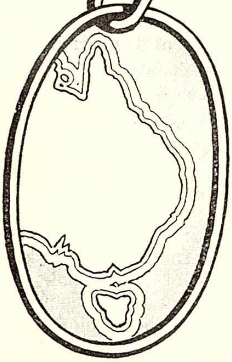

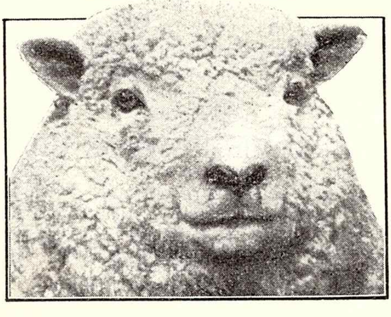

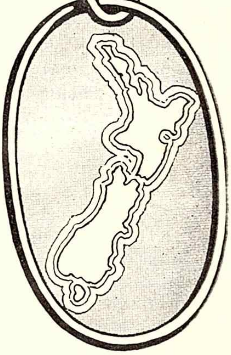

SPECIALISTS

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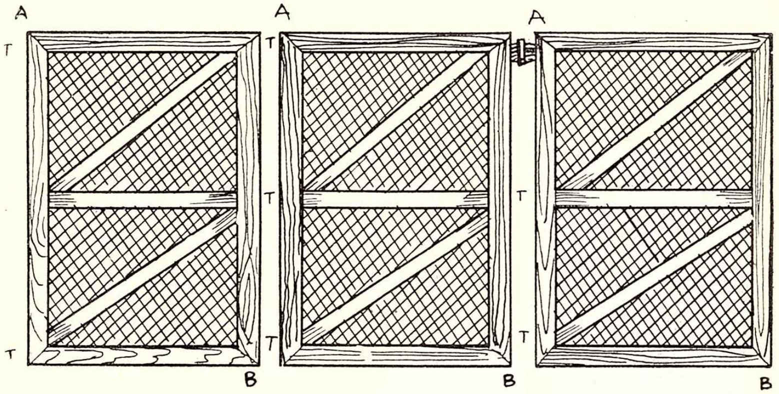
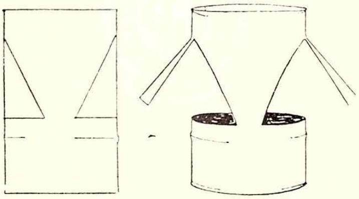
HINGED WOOL-BINS

Wool-bins that have been built into the shed take up a lot of space which may be required in the "off" season. Try the following. The bins are made in a series of doors. These are made of 2ft. 1in. timber and placed as shown. Over the whole door is tightly stretched 2in. wire netting; 3in. is not too large, but, of course, the smaller the better. Ordinary 10in. T hinges at T are strong enough to be fitted either direct to the wall or to a 4in. by 2ft. There is a drop-pin at B. If the door is 4ft. wide take care that the bin is a little over 4ft. wide also, to allow the door to shut flush along the wall. This means that the bin is practically square. Make your measurements in height to suit yourself. A fastening at the top of the doors is not really necessary if the rest is a strong job.—"Foot Rot," French Pass.



IRON LICK BOX

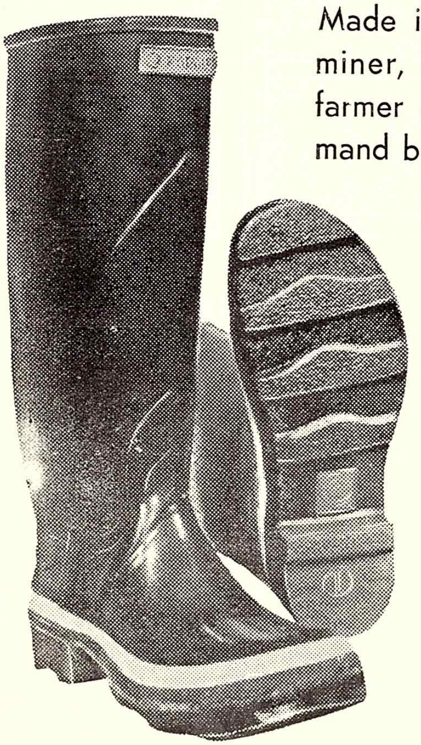
Take a 40-gallon iron drum and cut two sides as illustrated. Then bend them up and you will have a rain-proof lick container. When cutting the openings, do not cut too near to the bottom, say 18 inches from it and about 6 inches from the top—and put sufficient elevation on the pieces when bending them out to give enough fall to turn the rain, and not too much. It will be able to blow in if they are too high.—"Licks," Pukekoikoi



MIXING SHEEP DIP

Take a length of down-spouting (about 7ft.); make a filler on one end by soldering part of a petrol tin to it. To mix the dip, put the spouting down near to the bottom of the bath and pour the dip into the filler, at the same time moving the spouting about in the water. Then use the common plunger to stir the dip, and there will be an even mixture. It is impossible to mix a full dip of water, by pouring the dip on the water, and there is, therefore, a risk of poisoning the first sheep that are dipped in it. This method avoids this risk.—C.A.M., Cheviot.

TO IMITATE IS TO FLATTER—
But Protection for an Invention is a Vital Matter — See Page 144.



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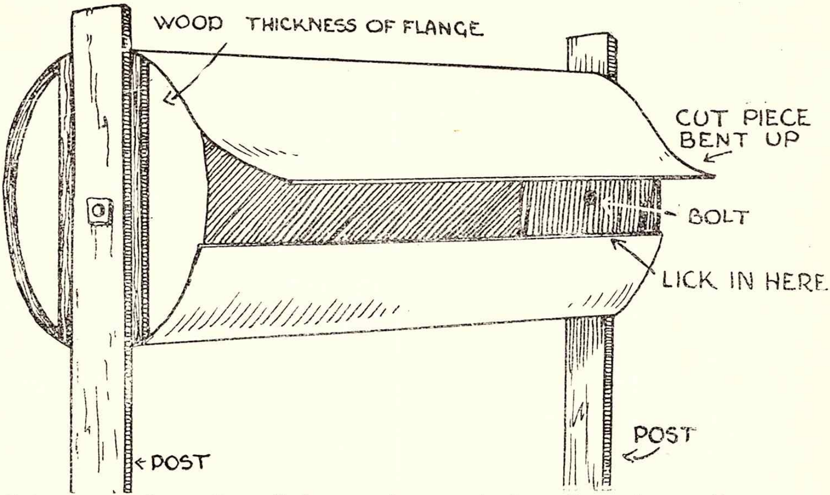
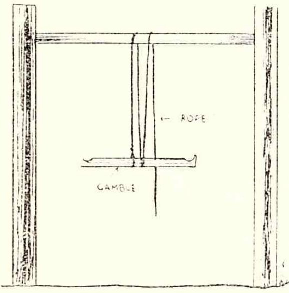
STOCK LICK TROUGH



Take an old five gallon oil drum and cut along the length and up the sides about six inches and bend up the cut piece to make a roof. Put a piece of wood in each end of the drum, the thickness being the same as the flange, then bore a hole in the centre of each end through both drum and wood. Put two broken-off posts in the ground, placing the drum between them a tight fit, and bore the holes in the posts at a height convenient for sheep to reach the lick. Place a bolt through each end of the drum from the inside and through the posts. This will be quite firm and last for years.—"Farm Hand," Havelock North.

HOISTING MUTTON

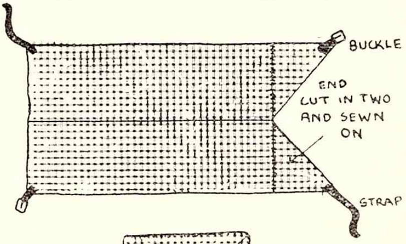
A man who kills his own sheep will find the following idea useful. When throwing the rope over the gallows, pass it round under the gambrel and throw the free end of the rope over

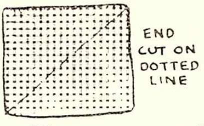


the gallows again It will be found not half the effort is required to lift up the sheep to the necessary height. —" Gallows "

COVERS FROM OLD PACKS

Stock covers from old wool packs are easily made. Unpick top and bottom and divide the sides in two. Cut top and bottom diagonally as in



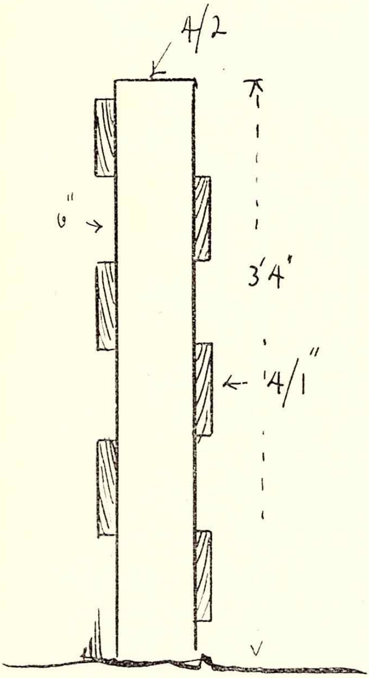


the diagram. Then sew on where the dotted lines are shown. A strap and buckle riveted on will complete the job.—"Woolpack," Taumarunui.

Lest Motors Maim —
INSURE WITH F. A. M. E.

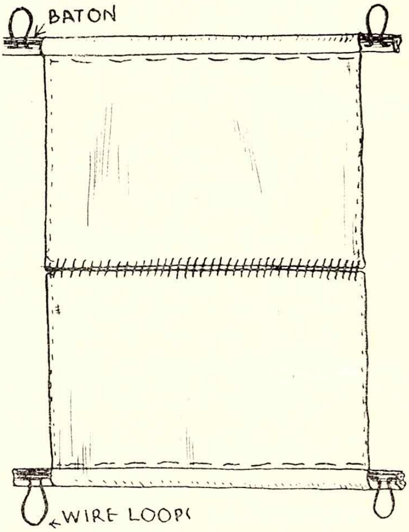
SHEEP-PEN DIVISIONS

It is desirable that sheep in a catching-pen in the woolshed should not be able to see what is going on in the next pen. Single close boarding is not entirely satisfactory, because although one side of the division is flush, the uprights project on the other and sheep are likely to become bruised on them if tightly packed in the pen. Close boarding both sides is expensive but the difficulty can be very easily and cheaply overcome by arranging the 4in. x 1in. rails as shown. This proves entirely satisfactory in practice.—J.E.D., Palmerston North.



PACKING SALT LICKS

Where rock-salt is put out for the stock and has to be packed on horses, difficulty in loading and keeping on the awkward, hundred-weight bags is generally experienced. This idea will overcome this difficulty The materials required are four large chaff sacks sewn firmly together in pairs; four lengths of willow a trifle longer than the chaff saddle and, if the load is further secured with a surcingle, it will be very hard to loosen it, however steep the country. This device, besides saving time in loading the horses, eliminates much lost time along the route in adjusting the loads. It is also useful at lambing for transporting dead-wool and skins.



CAST STOCK

In cases where one has an animal sick and cast a very handy method of getting the beast back on to its feet again is as follows:—Cut two trenches in the ground, opposite its front legs and back legs, and just deep enough for the feet to get into the bottom of the trench. Put down a layer of straw or other bedding between the two trenches and roll the beast into the trenches. In a day or so the animal will find the use of its legs again and will have no trouble in getting up and away once again. This saves a lot of trouble in erecting poles, endless chain, etc. I have had great success even with sheep in this manner.—W.E.G., Marton.

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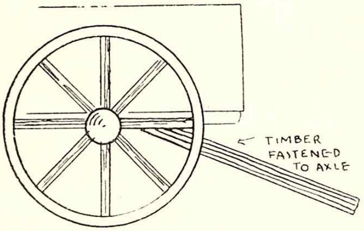
CHAPTER III.

HARNESS AND HORSES

JIBBING HORSES

When drawing a load up a hill, a jibbing horse almost invariably, when he starts to jib, goes backwards, and an accident is probable. To check this, attach a piece of scantling to the axle, a piece of 3 by 2 about 5ft. long. Attach with wire, and let it drag on the ground. As soon as the horse jibs, the scantling sticks in the ground and prevents the jibber from going backwards.—J.A.S.M., Hakataramea.

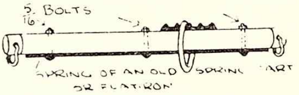


INSTEAD OF A BREECHING

When using a mower, or any vehicle with a pole, open a large pollard bag up both sides. Fold over lengthwise until it is six inches wide. Next tie a four foot piece of rope on one end, and cut a hole six inches from the other end. Place the band over the horse's withers threading the rope through hole. Carry rope through the front legs and tie tightly on to the crossbar of the pole. Make sure that the horses are standing well up in the chains. This is especially good on rough country, as when backing all the weight is on the band instead of on the horses' necks.—C.A.H.B., Ruawaro.

LIGHT SWINGLETREE

A light swingletree is an advantage where from two to five or six horses are being worked abreast. This can be made sufficiently strong, though light, if the spring of an old cart, or even a strip of flat iron is bolted, as shown, along the front of the tree.—H McL., Hakataramea Valley.



IMPROVISED CART SADDLE

When the cart saddle is broken or one is not obtainable, take the stirrups off a riding saddle and put the shafts through the stirrup leathers. A riding saddle would be strong enough for a rake or light cart.—"Handy Man," Dargaville.

CARE OF PACK SADDLES

A good way to repair or preserve the lining, and also the leather of a pack-saddle, is to cut an ordinary sack in half, and pull over each side of the saddle. Then cut holes for girth rings, breechings and breast-plate buckles. Tighten up by sewing with seaming twine

An excellent stuffing can also be made for pack saddles from raupo. Cut and fold to the length required, and lay in horizontally. There is a good deal of spring and give in raupo.—Mack, Te Pohue.

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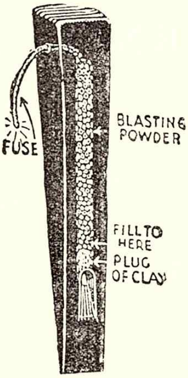

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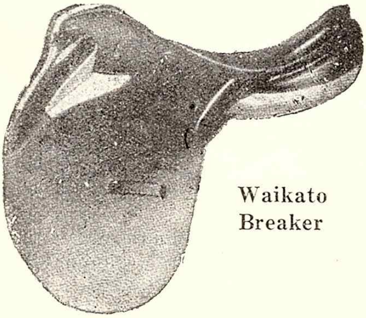
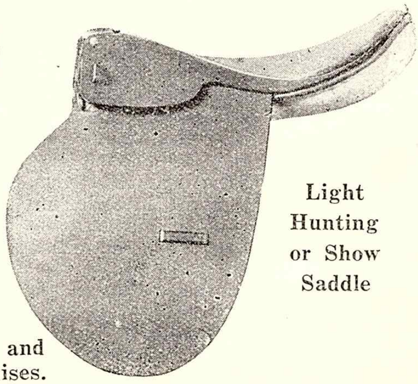


Waikato Breaker



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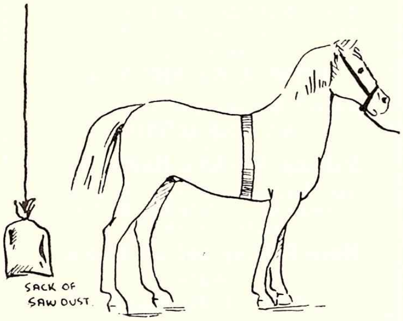
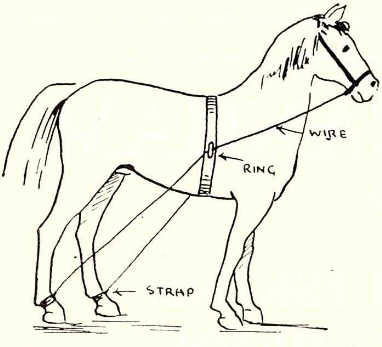
CURING KICKING

Two very good ways of curing a young horse from kicking are illustrated herewith If the horse kicks when in his stall in the stable suspend a sack of sawdust from the roof of the stable.



The more the horse kicks, the more the sack comes back, and hits his hind legs. The animal will soon tire of this Another way is to take two wires or tight ropes from the ring in the halter



to a strap around the fetlock Should the horse kick he will take the blow on his nose and will soon give up his bad habit.—M.N., Morrinsville.

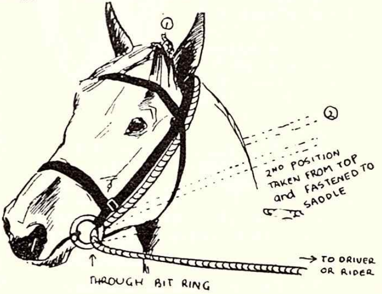
CURE FOR MANGE

Into a kerosene tin of cold water put about 2lb of salt and boil for 10 minutes When cool, pour sufficient into a bucket to mop the horse over. Apply every day and in a few weeks all trace of mange will be gone.—J.S., Rockville.

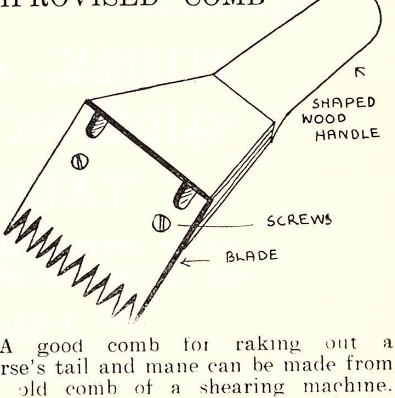
HEADSTRONG HORSES

When a young horse is headstrong and hard in the mouth, replace the reins with a length of ploughline run through the bit rings and knotted on top of the horse's head just behind the ears. You then have a "half purchase" which will enable you to hold him easily, and at the same time if he tries to pull back when tied up, the weight will be taken by his own head and not by the bit rings If this does not completely check him from pulling, carry the rope reins back from the bit rings to the D's on either side of the front of the saddle and attach them to these with two dog collars This will give you a "full purchase" which will enable you to pull his chin to his chest, if necessary, and will stop any horse from bolting or bucking as, when held tight, he cannot get his head down

—L.R.U., Kotemaori


①
②
2ND POSITION TAKEN FROM TOP and FASTENED TO SADDLE
→ TO DRIVER OR RIDER
THROUGH BIT RING

IMPROVISED COMB



A good comb for raking out a horse's tail and mane can be made from an old comb of a shearing machine. Attach it to a wooden handle with two screws or nails.—"Chaffie," Waihola.

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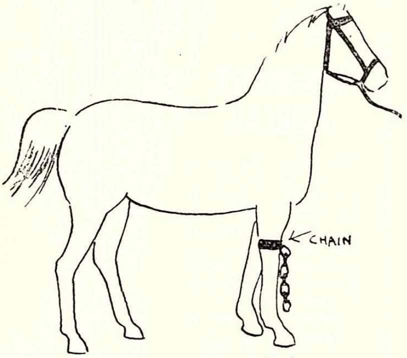
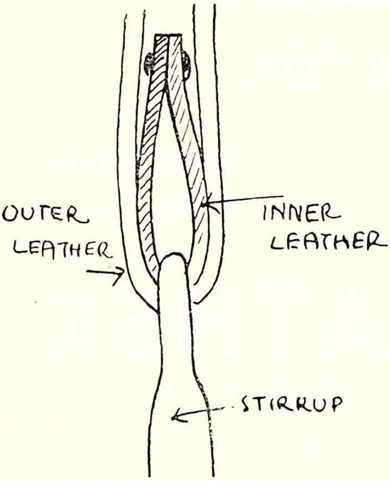
HORSES PAWING.

An easy way to stop a horse from pawing and making the front of his stall uneven by his continual hoof-beats is to strap a short chain of six or seven links to his foreleg just above the knee. This is a certain cure.—R.K.V., Bainham



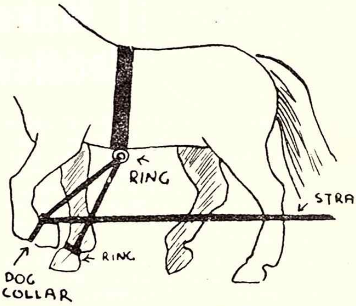
STIRRUP LEATHERS

A good way to save stirrup leathers from wearing through before their time is to rivet a piece of a worn-out leather into a loop through the slot in the iron. This goes above the stirrup leather as shown in the diagram. It takes all the friction, is concealed from view, and is well worth the while. The shorter the loop, the better.—E.M.B., Omapere



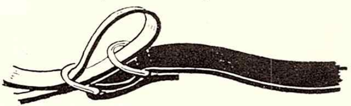
BREAKING-IN GEAR

When driving wild young horses on the long reins, one often has trouble in keeping them under control. The following is a way to retain complete control, which I have found a great success. A long driving rein is tied on to a dog collar which is fastened round one of the horse's front fetlocks. A stout ring is fastened to the girth and another dog collar buckled round the other fore fetlock. The free end of the long rein is passed through the ring on the girth and on through the ring on the second dog collar. This allows the horse to use both his front legs freely. When he cannot be controlled by the driving reins, pull the rein attached to the legs. He instantly falls on his nose. This does not harm him in the least when it is practised on soft ground. It should not be done on gravel or anything hard. I have found this to be very successful when breaking in wild young horses.—F.H., Kai Iwi.



FASTENING FOR REINS

It is very handy to have a buckle in the middle of bridle reins, but it is generally known that a buckle weakens the leather reins considerably—the tongue tearing its way out when a horse pulls back. Here is a way of overcoming the difficulty. Sew or rivet two saddle D's at the end of one rein, and fasten the other rein as shown in diagram. This fastening will never slip. —"Farmer." Napier.



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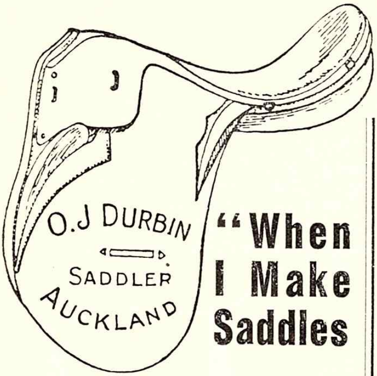

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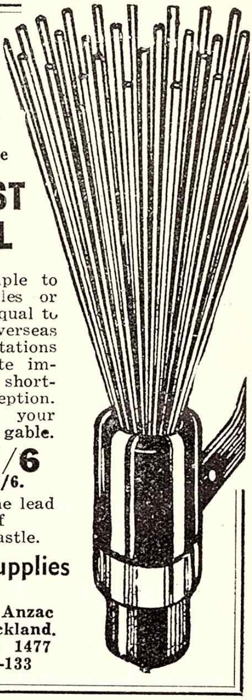

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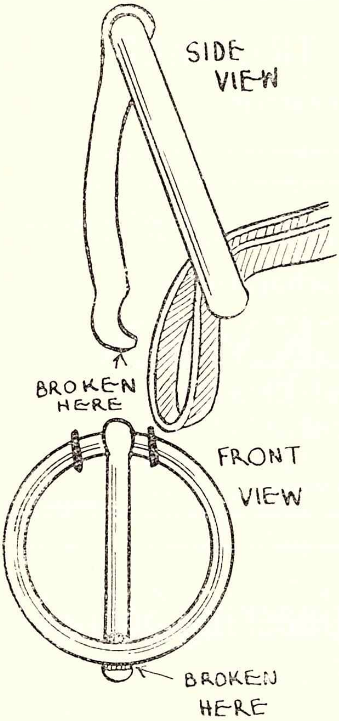
FOR TYING UP HORSES.

Instead of looping the reins over a batten or fixing them in some other way, why not use an old broken bit? When a bit breaks it usually does so where the two curves join. If it breaks, as shown in diagram 1, it hooks on to the ring. The main thing is to see that the curve is outward from the post (diagram 2). If a horse pulls back the ring just swings out at right angles from the post.—Buck, Tikokino

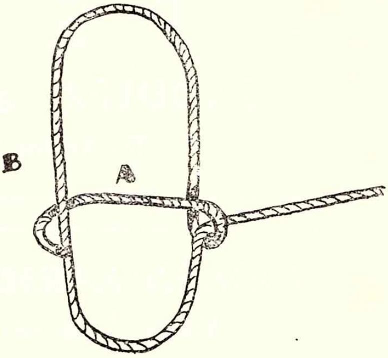


GOOD HARNESS GREASE

To make a good harness preservative, mix one bottle of neatsfoot oil, one bottle of castor oil, 1lb mutton fat, one piece of beeswax (size of a small walnut), and one large tin of black boot polish. Melt and stir till cool. This can be applied with a paint brush.—E.S.K., Kiritaki.

AN ADJUSTABLE HALTER

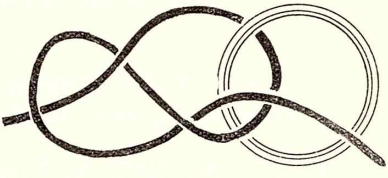
The main feature in this halter is that it can be made to fit any horse by sliding the end of the nose piece A up or down the main rope B. The end of the rope A is put round the main rope B and spliced back into itself, making it fit fairly tight.—L.P., Waitakaro.



CHAFF IN HORSE'S EYE

It frequently happens, when horses are fed in mangers outside in windy weather, that bits of chaff get into their eyes. A quick and effective method of removing this, is to dip the point of the finger in axle grease or tar. The chaff will adhere to it immediately it touches it.—J.A.S.M., Hakataramea

BRIDLE-REIN KNOT



A knot which will not slip or come undone, and which is very suitable for attaching a leather bridle-rein or plough line to the bit is illustrated.—E.S.K. Kiritaki

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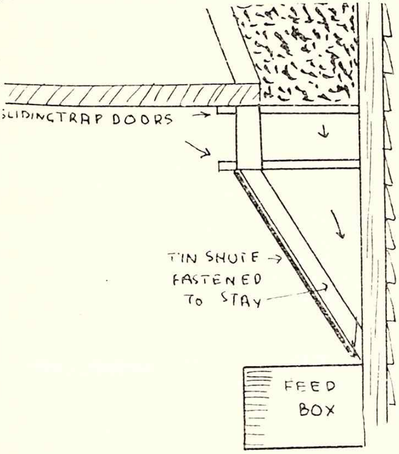
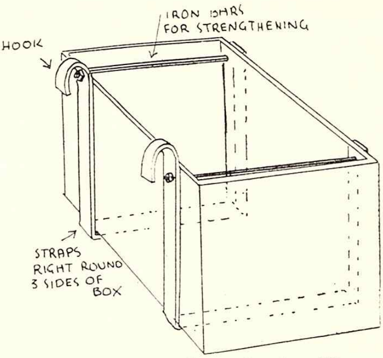
STABLE FEED CHUTE

On farms where a number of horses are fed in stables this device for feeding chaff will be found both quick and labour saving. I shall not give any measurements as the size of a feed of chaff differs in all parts of the country. Construct a long, narrow chaff bin in the stable loft so that it runs above the head of each stall. Find the cubic capacity of one horse's feed of chaff and make each trap the same volume. Under a square hole cut in the loft floor above each stall-head, construct traps with sliding doors top and bottom. From the bottom of each trap run a tin chute; this can be tacked to a couple of stays nailed under each trap. To operate fill the bin with chaff, push in the bottom door and pull out top, then close top door and pull out bottom. —D.T. Martinborough.



MOVABLE FEED BOXES

While the conventional nosebag made from a chaff sack is in general use, it is by no means an ideal way to feed horses. A useful feeder can be readily made from a 50lb. tea chest. These can be procured from any store. By means of two lengths of ¾in. by ¼in. flat iron and two pieces of ⅜in. round iron, a strong one-horse feed box is made. This is light and easily moved from place to place as the work or the wetness of the ground demands. The two pieces of flat iron are carried down the front, bottom and back of the box and are then bent over to form hooks. Through the box from the front to back is taken the round iron, and riveted at each end. These brace the box. Boxes so made will hang on any fence.—"Furrow," Hastings.


IRON BARS FOR STRENGTHENING
HOOK
STRAPS RIGHT ROUND 3 SIDES OF BOX

SERVICEABLE BRIDLE

Here is a sketch of a serviceable farm bridle. Take a piece of 1in. leather, about 4ft. 6in. long. Pass it through the buckle, as shown in figure 1, and on through the bit-ring and fasten to the buckle. Do the same with the other end, but put it through the other bit-ring. Take another 1in. strap, about 19in. long, and fasten to the head-piece for the forehead band. Double 2in. round the head-strap for secure fastening. Another ½in. strap, with a small buckle on the end, serves for a throat-lash. The reins are an 8ft. strap, 1in. across, fastened to the bit-ring by two snap hooks. When fastening, sewing is preferable to riveting.—F.H., Kai Iwi.

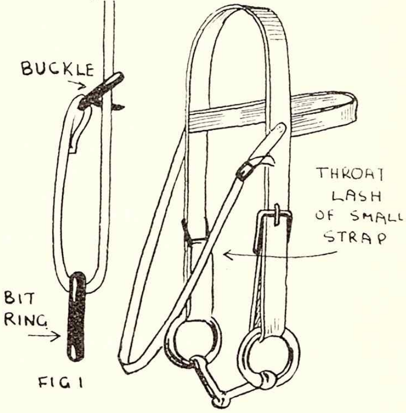


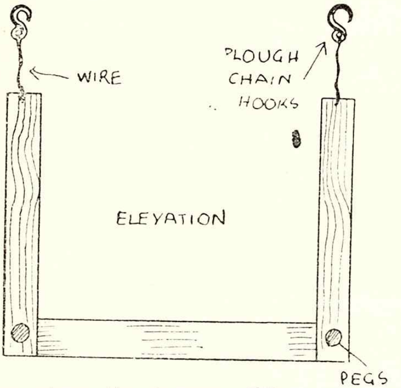
FIG 1

PROTECT YOUR IDEAS —
And Create a More Than a "40-Hour a Week" Profit Earner— See Page 144

MAKESHIFT PACK SADDLE

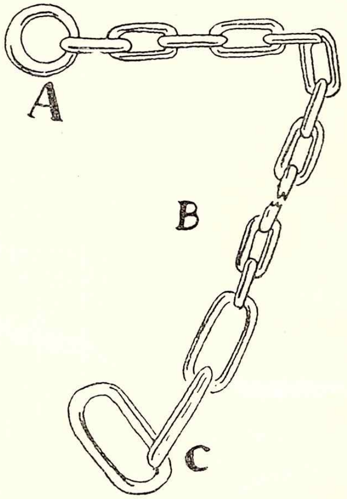
An ordinary military saddle which has an iron bar running round the back of the seat and another over the pommel can be used, without damage as a pack saddle for light loads. It is necessary to make a cradle for each side as follows—

To make one cradle, take two pieces of 3 x 2 one foot long; bore a small hole in the end of each piece. Now pass No. 8 wire through the hole and attach a hook from a plough chain. Twist the wire up tight. Now connect the two pieces together by nailing or screwing a 3 x 1 board 16 inches long, along the bottom. When this is done bore an inch hole two inches from the end of each 3 x 2 and take two hard wood pegs to fit the holes. These pegs can be 12 to 14 inches long. Now lift cradle up and hook behind the iron bars on the saddle. Stirrup leathers and two pieces of rope serve as pack straps. A length of rope passed over the load can be used as a surcingle.—Pack-Ard, Makuri.



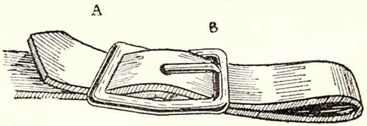
PACK CHAINS

When packing posts, boxes, wire-netting, etc. try using chains instead of straps. Get your blacksmith to make a set of four chains in accordance with the accompanying diagram. A is a 1½in. ring ⅜in. thick. B is a ¼in. short link chain 3ft 6in long. C is a ⅜in large link chain 1ft. 6in. long. Method of use. The ring at A is put into the hook on the pack saddle. The rest of the chain is wound round the posts, etc., in the usual way and the large links at C hooked on to make the right length. One turn is sufficient, but two makes doubly sure. Great care must be taken to make the big links large enough to have ample play in the hooks. This method is absolutely non-slip, as the links seem to bite into the timber. There is less likelihood of breakage and they do not perish as does leather. The surcingle is used in the ordinary way.—Foot Rot, French Pass.



"LOOSE" BUCKLES

This I have found the most satisfactory way to put a buckle on a strap that is attached to a ring, etc., and is especially suitable for attaching bridle reins to the bit ring. There are no stitches to rot and the buckle may be taken out and the strap laid flat to ensure a thorough oiling. If the leather is thick and a bit hard, the loop may have a tendency to bend down, but this will soon straighten out with use—and oil. Should it still persist, soak in cold water for a few hours and leave to dry overnight with a weight on the looped end. The loose end at A should protrude about ½in. Once it has "set" it looks very neat and will never come undone.—"Foot Rot," French Pass.



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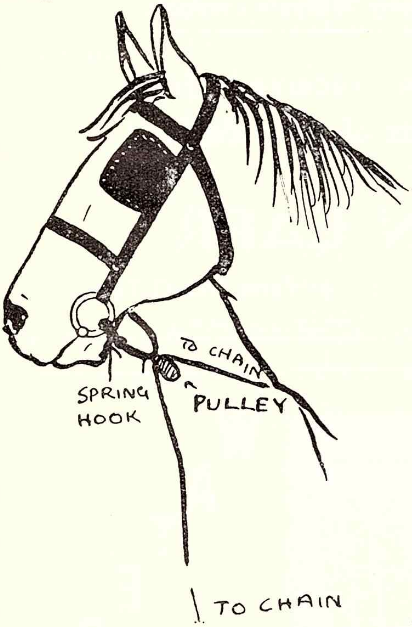
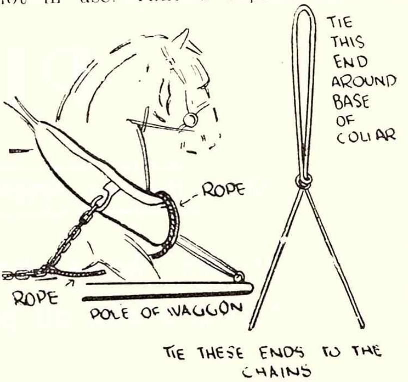
TIE-BACK ROPES

When one has a horse in the team which is faster than his mates he is usually worked in the centre of the team to make it easier to tie him back. The old method is to tie a rope from each side of the bridle back to the chain of the horse on each side. As these horses are not always level it means that the tie-back ropes are often tight on one side and slack on the other, thereby causing unnecessary suffering to the horse tied back, and spoiling his "mouth." The tie-back illustrated has a decided advantage in that the small pulley allows the horse free movement of the head and keeps the strain even at all times. To adjust, get a short piece of rope with a spring hook fixed in the centre, and fasten each end to the bit rings. Take about six feet of ploughline and run one end through a small galvanised pulley and splice a spring hook on each end to fasten to the chains where required. The pulley ring is hooked to the centre of the short rope. To unyolk, simply unhook the pulley



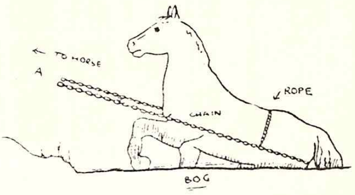
BACKING A WAGON

The labour of backing a wagon can be greatly decreased for a horse if the following method is used. It applies, of course, only when backing harness is not in use. Take a rope tied in the manner illustrated. Tie an end on each of the chains and then on to the bottom of the collar. When the horse backs, the collar will be prevented from slipping up his neck by the rope.—J.S.S., Wairoa


TIE THIS END AROUND BASE OF COLLAR
ROPE
ROPE
POLE OF WAGGON
TIE THESE ENDS TO THE CHAINS

BOGGED HORSES

When a horse or cattle beast becomes bogged, take a pair of chains and hook them together Then place them under the hind-quarters, about the mud level. Tie a rope from one side to the other over the beast. To the end of chains A, hitch another horse, which will be able to pull the animal out without injuring it as is so often done when the rope is attached round the bogged animal's neck.—"Farmhand." Sanson.



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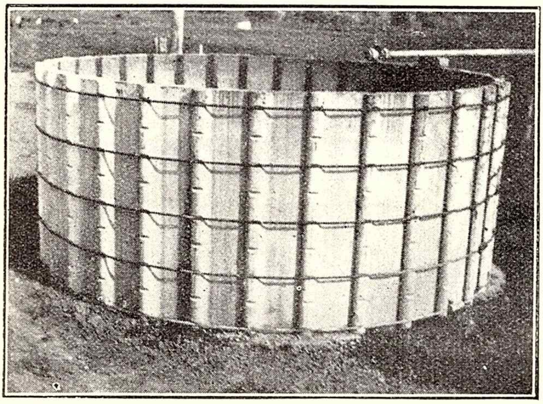

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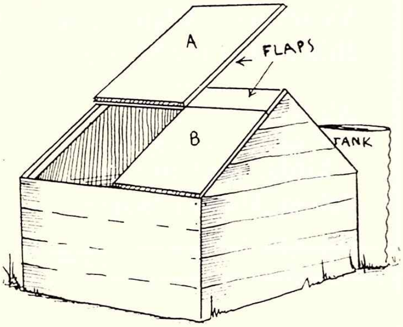
CHAPTER IV.

FOR THE PIG KEEPER

CLEANING THE STY

This idea would help most farmers to clean out the pig sty. The two flaps, A and B, fall back on to the roof of the sty, to allow the sun to be let into the sty. When all the mud is dry, it will be easier to clean. The tank at the back will be handy for storing water to wash out the sty. Opening the flap will facilitate the drying of the sty.—A.H., Auckland.



RUBBING POSTS

Rubbing posts are of great value to pigs running in the open. It is natural for a pig to rub itself, and one cannot prevent it. If posts are provided for the purpose, the fences will be saved a great deal of wear and tear, and the constant troubles involved in repairs will be greatly minimised. Every paddock in which pigs are turned out should have a good strong post here and there, so that the pigs will not have far to go to find it. These posts can be improved by nailing a crosspiece to them, or, better still, two crosspieces, at right angles to one another at different heights from the ground, so that pigs of different sizes can get their backs underneath. A further improvement can be made by wrapping bits of old sacking round the posts and the crosspiece and saturating them with pig oil. The pigs will thus oil themselves automatically every time they have a rub. The oil helps to keep the skin and coat in good condition, tends to heal sores, and does much to reduce the worry and irritation caused by flies and other insects during the summer. The cost is small in proportion to the good results obtained.

Another thing that gives great comfort to pigs in the summer is a pool where they can wallow. It does them no harm to get themselves covered with mud, which will come off easily enough when it is dry, and the opportunity of wallowing does a good deal toward keeping the pigs free from lice and ticks.—L.E.B., West Ryde, N.S.W.

HANDLING PIGS

When handling pigs, take a plough line or other piece of rope of sufficient length and pass a running noose over the pig's head. Carry the rope back and pass a half-hitch round the body just in front of the hind legs. This rope gives complete control without injury to the pig.—E.P., Palmerston North.

Sometimes a farmer has three or four pigs to be sent away on a lorry and has no loading race, thus making it awkward to load them. One man stands on the left and holds the pig's ear with his left hand while another stands on the right side and holds the pig's tail with his left hand. Both must then grasp hands under the pig's chest near the front legs and it is then an easy job to lift it into the lorry—N.T.G., Omatane.

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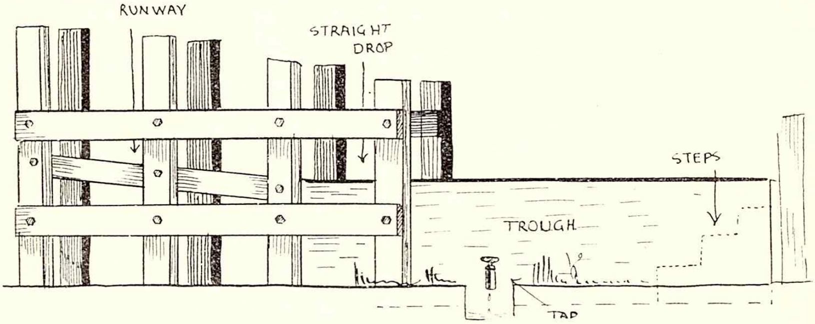
DIP FOR OILING PIGS

The sketch shows an oil dip for treating pigs for lice and scurf. The contents of the dip are about 2in. to 3in. of oil floating on a foot or more of water. The depth of the contents can be regulated by pouring in more water or by running water off from the tap at the bottom of the dip. The pigs will go under at the beginning, and as they get out they will be coated with oil. Big pigs are dipped first and the smaller ones follow, so that when the weaners are put through the depth can be lowered by running off some water.—Lucerne, Motueka.



HANDY MEASURES

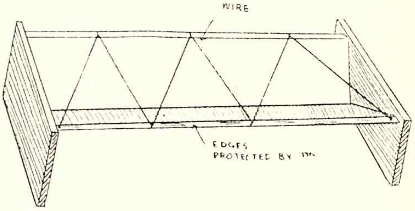
The following is a table for measuring foodstuffs:—1 bushel equals 8 gallons, 32 quarts; 1 petrol tin (4 gallons) equals half-bushel; a box 4in. x 4in. x 4in., equals 1 quart; a box 6in. x 6in x 8in., equals a gallon; a box 12in. x 12in x 15½in., equals 1 bushel (inside measurements).

Weights of one bushel of different foodstuffs:—Wheat, 60lb.; maize, 56lb.; peas, 60lb.; oats, 40-42lb.; bran, 20lb.; pollard, 20lb. A petrol tin filled (not packed) would represent one-half of the above weights.

To make a rough estimate of the dressed weight of a live pig, measure the length from between the ears to the butt of the tail, and the girth just behind the shoulders. Multiply these two measurements (in inches) together and divide by 12. This gives the dressed weight. To calculate the live weight add 20lb. to 25lb.—"Reader."

TROUGH-BITING PIGS

Pigs develop a habit of chewing at the wood of the trough, which gets caked with food or saturated with sour milk, and these are thus soon ruined beyond repair. To prevent this take an old piece of ridging iron and nail it securely to the inside of the trough



[illegible], not quite long enough to bend round to cover the ends of the trough, stud them with old nails or staples. Bend the edges of the iron over the edge of the trough, run a length of wire along for a cleat and staple home securely. Instead of using wooden slats for bars across the top of the trough, take another piece of wire and staple in a zig-zag fashion as illustrated. This will prevent pigs working the food out of the trough at the ends.—I.D.R., Motueka.

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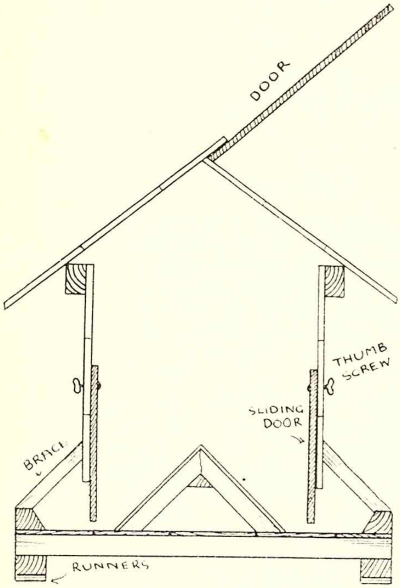
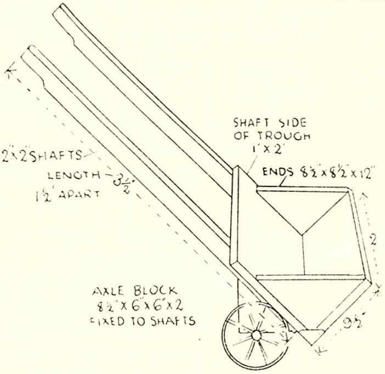
SELF-FEEDER FOR PIGS

Here is a self-feeder which saves time and labour and prepares pigs for market in a more expeditious and economic manner than other systems of feeding In combination with grazing, it gives the most gratifying results. The self-feeder is simply a specially-designed box or hopper, so constructed that, when filled with grain, meal or other food, the feed gravitates into a trough at the base and is easily accessible. The drawing shows that one half of the roof is hinged, and used as a filling door, the possibility of leakage being prevented by continuing the opposite side several inches past the peak, thus protecting the joint. The structure rests on three pieces of 2in. by 4in. on edge. By using a pair of runners or skids, the outfit is made portable. The walls consist of three 2in. by 3in. studs on each side, covered inside with ⅞in. boarding. On top of the studs is a 2in. by 3in. plate. The boarding should start at 5in. above the floor of the trough, and a gate, ⅞in. by 10in in width, the full length of the feeder, slides behind the boarding. This gate may be fastened at any desired height by thumb screws, sliding in a vertical slot on the outside face of the boarding. The floor of the bin consists of ⅞in. boarding laid on 2in. by 2in rafters, at 45 degrees. The floor of the trough is ⅞in boarding laid across the 2in. by 4in. base pieces. The front of the trough is made of one piece, of 4in. by 4in. (or two 2in. by 4in.) bevelled from the centre down to the flooring. From the front are placed 2in. by 2in. braces, running up to a 1in. by 3in. piece, laid along both sides. The roof consists of 2in. by 2in. rafters resting on the 2in by 3in. plate, covered with 1in boarding and ready roofing. The door, which is made of ⅞in. boarding, with 1in. by 3in. battens at the back, should be equipped with hinges and handle for lifting. The structure is 5ft. 1¾in. by 6ft. 5¾in., outside dimensions.—F.R.H., Awa-iti



WHEELED PIG-TROUGH

The pig raiser who has frequently to shift pigs from one pen to another, knows how stubborn and difficult they can be to drive. If the wheeled trough illustrated is filled with milk and used before feeding the pigs will follow it eagerly. The plan illustrated is intended for 8in. wheels. If larger wheels are used, larger axle blocks, placed higher on the shafts, will be necessary.—Cowboy, Irwell.



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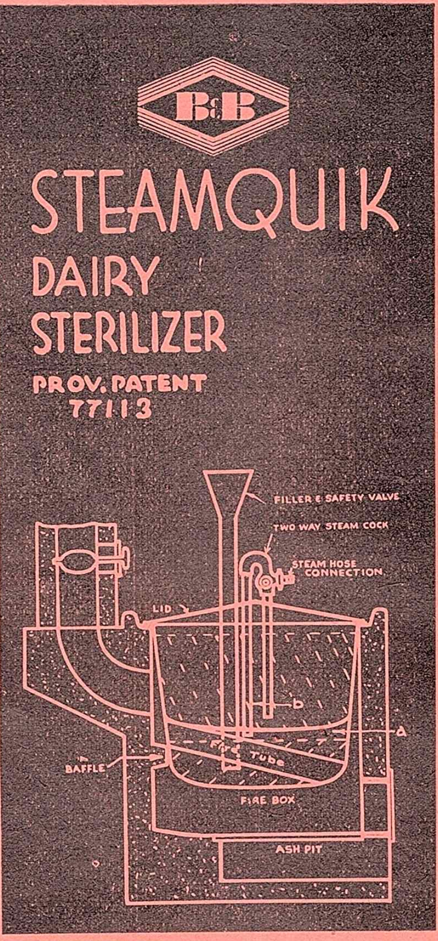

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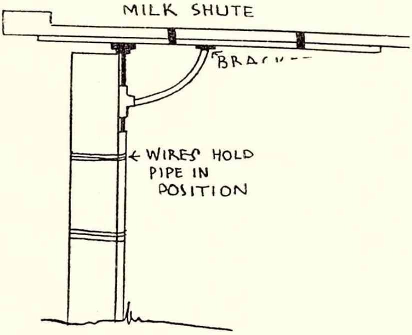
CHAPTER V

DAIRYING DEVICES

SWINGING MILK CHUTE

This swinging milk chute is very handy when the skim milk is being run into buckets or cans. When it is desired to change the cans, all you have to do is to swing it from one can to the other. The "T" join acts as a swivel, the $\frac{1}{2}$in. piping easily fitting in the 1in. pipe, which is driven firmly into the ground. The post acts as a support. Most of the details can be gathered from the sketch.—Togo, Manutahi.

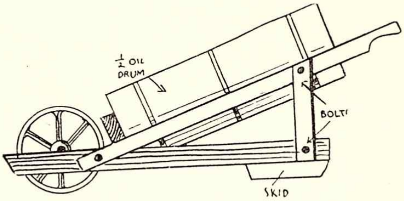


CARRYING BUCKETS

This hint should be of use to many. Take two pieces of wood with convenient hand grips in the centres, and notches at each end to take the handles of kerosene tins or buckets. Have the notches far enough apart, so that the tins will touch each other. I find this very convenient for taking skim milk to the barrel when there are three or four tins to go at once.—"Lazy," Peria.

HANDY BARROW

The sketch illustrates a wheel-barrow for carrying cream cans or, alternatively, half a 40gal. benzine drum. This will be found useful for carting cement or manure, and for many other purposes. The half-drum, of course, is detachable.—C.C., Tahuna.



UDDER SYRINGE

A very satisfactory syringe for treating mammitis and similar udder troubles, can easily be made from a new milking machine inflation, two corks, some strong twine and a piece of glass tube. Force a sound cork, slightly larger than the inflation into each end and bind tightly with twine to hold securely. Make a small puncture through the centre of one cork, and insert in this a 3in. length of one-sixteenth inch glass tubing. The syringe is operated by squeezing the inflation to expel the air, then inserting the glass tubing in the medicinal mixture, after which the glass tubing is quickly inserted up the teat canal and the inflation squeezed to inject its contents. The point of the glass tube should be smoothed and slightly tapered by rubbing on emery paper.—J.M.M., Te Kopuru.

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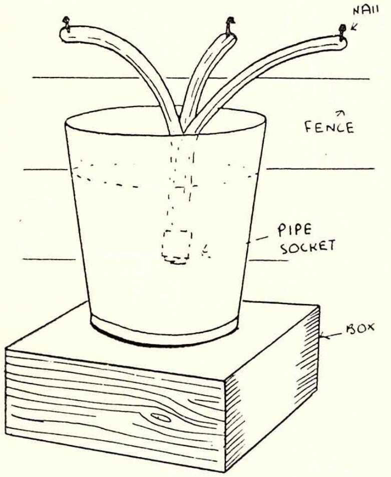
FEEDING CALVES

A simple arrangement for feeding three bobby calves at once can be made from three lengths of old air tubing approximately 12 to 18 inches long, one 1in. pipe-socket, three nails and a bucket.

To make, bore a hole of a size sufficient to take the rubber tubing, through the wall of the calf-pen at the approximate height of a calf's head. Push a nail through the centre of one piece of tubing 4in. from one end. Push the short end of the rubber tube through the hole in the wall until jammed by the nail. Repeat this with the other two tubes, spacing the holes in the wall to allow convenient room for a calf to stand at each. Then, taking the long ends of the tubes push them through the pipe socket and insert in a bucket of milk. Obviously, any number of bobbies may be fed at the same time by enlarging the plant. Care must be taken that the level of the milk is not above the holes in the wall. or it will syphon automatically. The best results will be had by placing the bucket on a block or stool so that the lip of the bucket is approximately on a level with the holes in the wall.—D.R.N.. Hinewera.



All sorts of means are used to teach calves to drink when they are being weaned. Some use a finger, while others buy a manufactured device. One which I have found to be most practical, simple and easy to make can be constructed as follows:—Take a wire about 3ft. long and bend one end at an angle and fasten a short piece of maize cob to it. By holding this cob just above the surface of the milk and lowering it as the calf begins to suck, the animal will soon learn to drink.—J.H.. West Ryde, N.S.W.

If a calf will not drink without the finger, get a piece of three in. by one in. plank about six inches long. In the centre of this bore a hole in which a piece of claw tubing will fit tightly. Force the claw tubing into the hole, leaving three or four inches projecting on one side Place the board on the bucket with the tube in the milk and the calf will suck the milk through the tube without any trouble.—" Hayseeds," Kaitaia.

By feeding my calves through a fence I have greatly simplified my work. Cut small holes in the netting, about two feet apart and a foot from the ground, protecting these holes with a 2 x 2 stake on either side of the hole and a crosspiece on top about two feet from the ground. This frame prevents two calves from poking their heads through one hole and keeps the hole from spreading. Any number of calves, either young or old, can be fed in this manner, and different feeding can be adopted if desired, as once a calf gets his head through the fence it will not leave the bucket until it is empty. When calves are fed in troughs I find the strongest get too much and the weakest too little.—"Tiger Lil," Ward.

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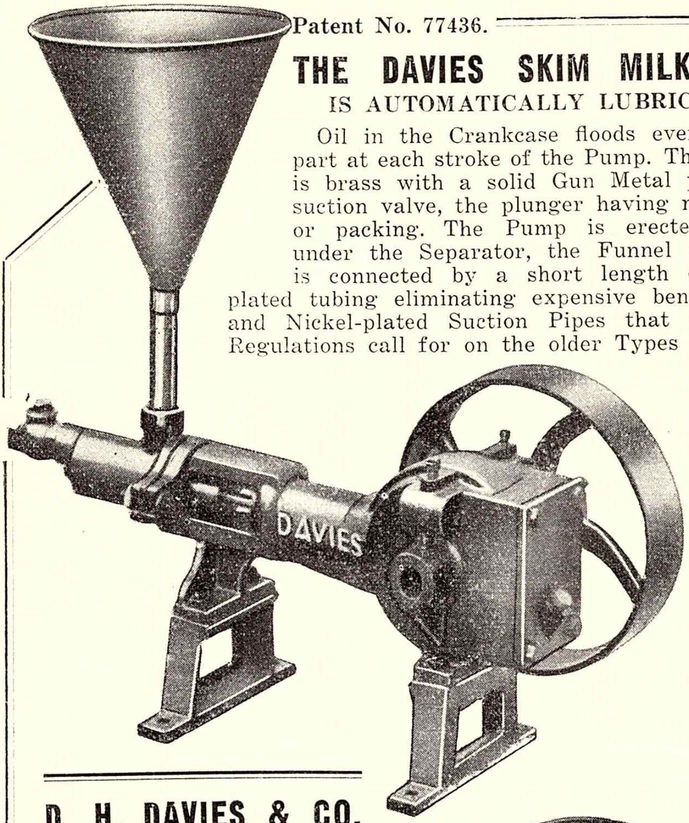

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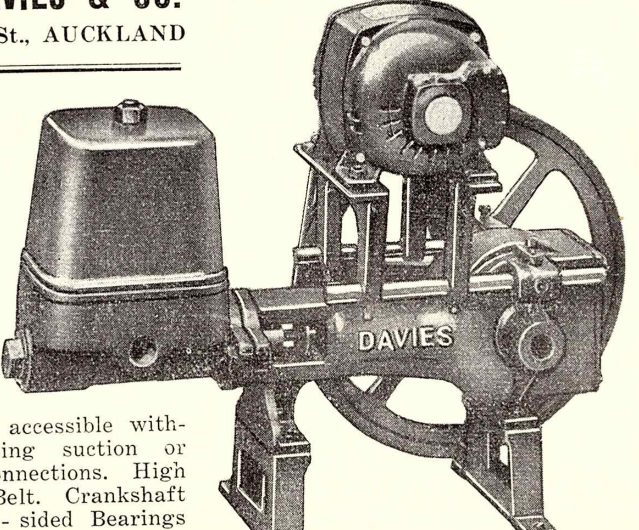

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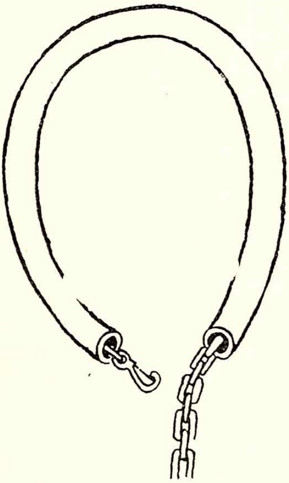
CONVEYANCE FOR CALVES

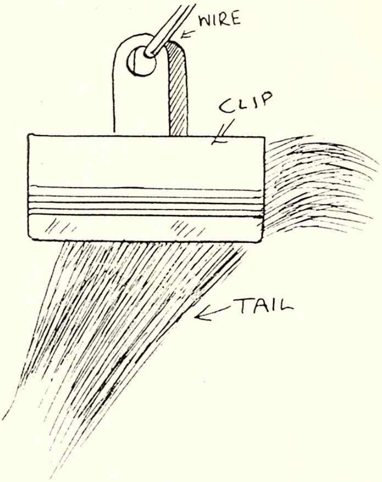
This simple conveyance will save many hours, and at the same time is a very humane method of getting the young, new-born calves in from the paddock. Make a very light sledge on wheels or skids, and have four corner uprights. Then take a piece of wire-netting and fix on securely for sides. This has the effect of both keeping the calves in, and lets the mother see her calf, which she will then follow. Hook the sledge behind the dray or waggon when going to feed out and you can then bring in all the calves at once without any trouble or worry.—"Humanity," Tamahere.

TETHERING CALVES



An excellent calf collar can be made by threading a piece of light chain through an old piece of hose piping and fastening it around the calf's neck in the form of a loop as shown in the diagram. This device prevents chafing. "Cow Cocky," Blenheim.

BAIL CONVENIENCE



This idea has proved a boon in the hot summer weather, when the cows are annoyed with the flies. When the cow moves out the door the tail will pull out of the clip, thus there is no need to release the tail with the hand.—"Mike." Wanganui

CURE FOR KICKING COW

Dairymen who are troubled with kicking cows will find the following will quieten the most confirmed kicker:—Before starting to milk put a "snap" attached to the end of a small rope into her nose and tie the rope to a peg put into the front of the bail, slightly elevating her nose. She will then stand as quietly while she is being milked as the most gentle cow in the herd. The snap does not cause her pain, but giving her something else to think of makes her docile. On the same principle, a cord placed in the mouth of a vicious horse and carried up over the head and tied to an ear tightly, enables the blacksmith to shoe him without trouble.—Scotty, Bainham.

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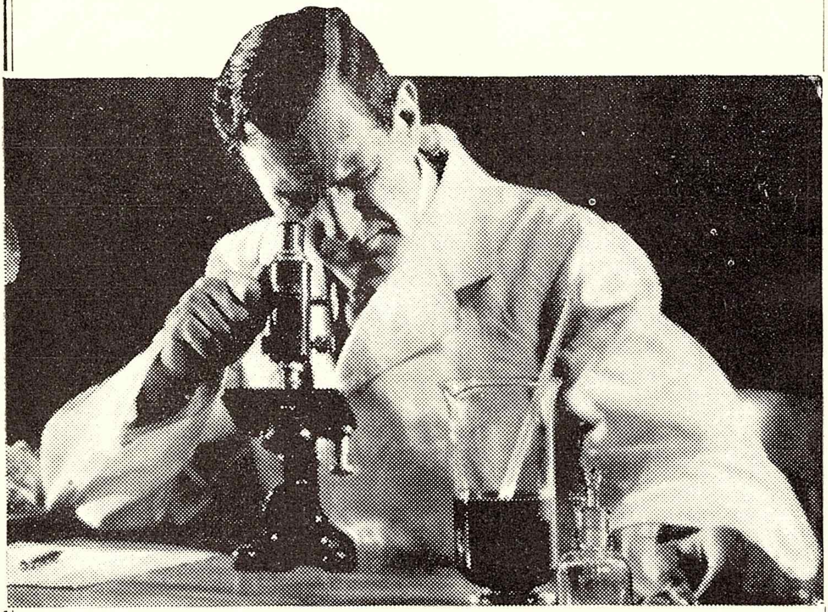

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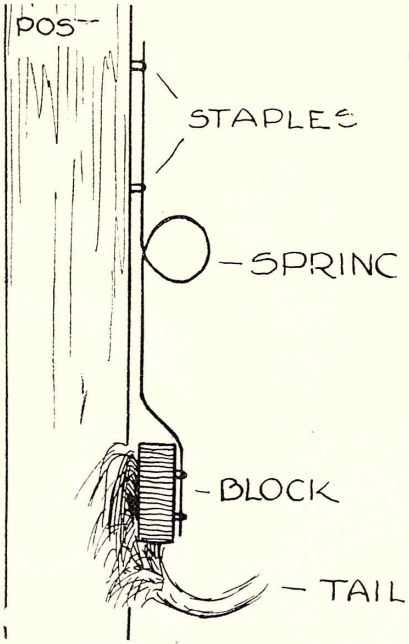
SECURING COW'S TAIL

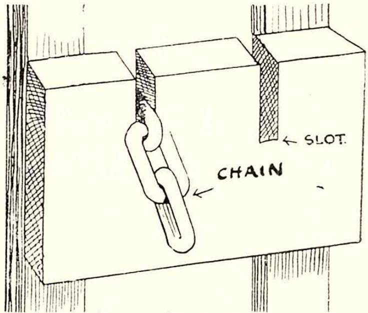
Where restless cows are always flicking with their tails at the milker this simple idea will prove useful. It consists of a piece of No. 8 wire (steel wire if possible) bent in the shape of a spring and stapled on to a small block of wood.



The top of the spring is securely stapled to the post. The switch of the cow's tail is placed under the block and will be held securely, but will come away when she moves out of the bail.—B.G.T., Hororata.

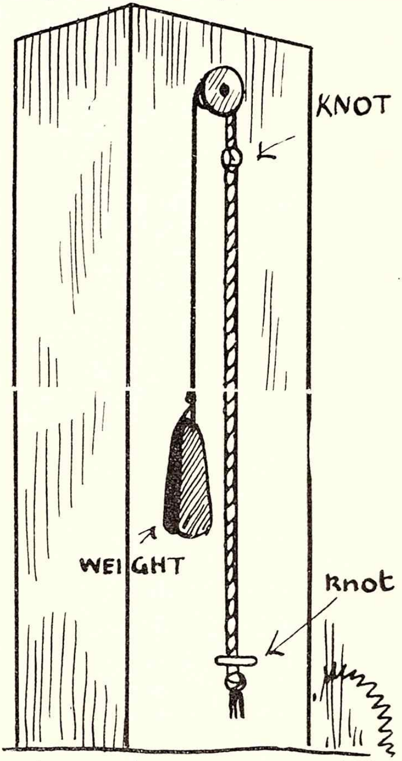
BAIL CHAINS

Light chains are preferable to ropes to pass across behind the cows when they are in the walk-through type of shed. They keep cleaner, last longer and are more quickly fixed at the right length if the following device is fixed to the dummy. Take a piece of old flat iron long enough to go across the end of the dummy and bore a hole at each end to attach it with coach screws or bolts to the upright posts. About two inches from each end put in two cuts with a hack saw about ¼in. apart and knock the pieces out with a cold chisel. Slip a link of each chain into these slots and they will hold against almost any pressure from the cow — C. B., Huntly.



LEG-ROPE APPARATUS

Here is an illustration which indicates that a weight draws the rope through a loop and up the pile to which the usual type of leg-rope is attached. I am sure that by this method hours of stooping and hanging up are saved during a season.—D.W., Carterton



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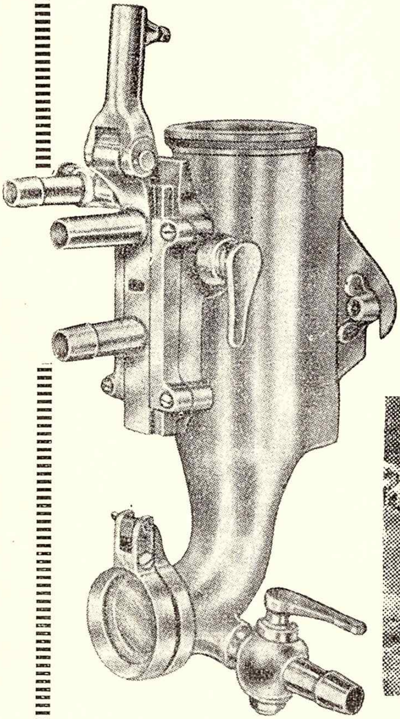

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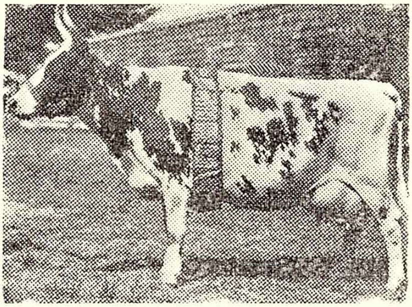

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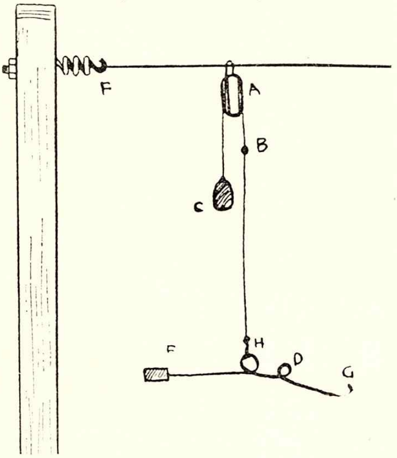
TEAT-CUP SUPPORT

In my experience the following is the best teat-cup support I know of. It meets every need. Fix No. 8 wire for the full length of the shed immediately above the teatcups when in use, and about 7ft. above the floor. Keep this wire taut by using an eyebolt and screwing up the nut when the wire stretches. Fix the wire to a 3in. x 1in. above each partition by nailing same to ceiling or rafters. For each machine or set of teatcups place one small pulley on the wire before fixing, running the wire through the eye, thus leaving the pulley suspended. Run a piece of good cord or small rope about 6ft. long through the pulley and fix to top end a 3lb. weight, made of lead. Tie a knot in the cord about 1ft. 6in. from the top end to prevent it pulling through the pulley.

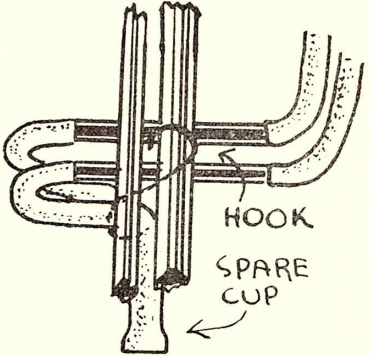


Fix the bottom end of the cord to a piece of wire as in the diagram. Length of wire from E to G should be about 20in. This support, if erected correctly, will be quite automatic. It makes no difference on which stall it is used, or whether the cow moves, or is high or low. It can easily be adjusted for hard or easy cows as the hook or the weight can be placed just where necessary and is out of the way.

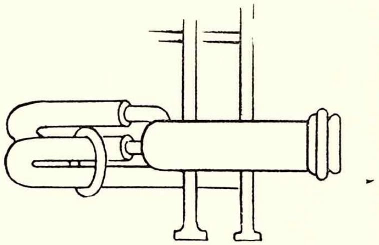
(a) Pulley on wire with cord in position; (b) knot in cord to prevent running through when unhooked; (c) 3lb. weight on end of cord; (d) two loops made by bending wire, one to be nearer G to get purchase; (e) 2lb. weight on end of wire to act as a lever; (g) other end of wire bent to make a hook to hook into the claw or, if necessary, any single teatcup if little suction; (h) snap hook at end of cord to wire, the second loop will give much greater support to the claw; (f) eyebolt for tightening wire.—T.D.R., Motueka.

UNWANTED TEAT CUPS

In nearly all dairy herds there will be an odd "three-quarter" cow. This means that one teat cup has to be kept out of the way. An easy and quick method is to take the handle of a benzine tin, twist it to form an S, place one end of the hook over the milk pipe in the "claw," fold the unwanted cup underneath and place in the other end of the hook. It will stay there even if the cow kicks.—W.A.D., Wellington.



When an occasional three-teated cow has to be milked in a shed where machines are used, keep one or two brass curtain rings, 1¼in. in diameter, handy. Bend over the claw tube of the cup which is not required, and slip a ring over this as illustrated. This is the simplest and quickest method of cutting out an unwanted teat-cup of the many that I have tried.—J.I., Takaka.



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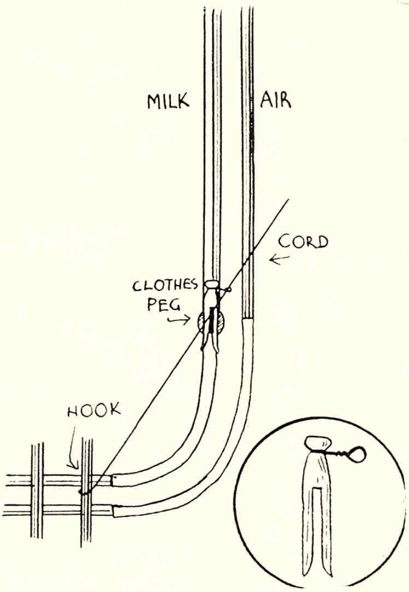
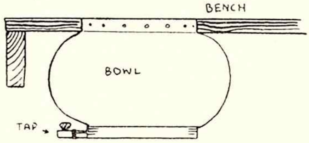


SEPARATOR SHELF

One of the most used, and handiest fittings on any farm, is a shelf about 2ft. wide, made of 1in. mesh wire-netting, framed with ½in. by 1in. timber. This is fitted to the wall alongside the vat used for washing the separator, and you can readily see the time it saves by holding all pieces of the machine after washing. It allows the fresh air to circulate all around them, as is not the case with the ordinary shelf.—Lavina, Wanganui.

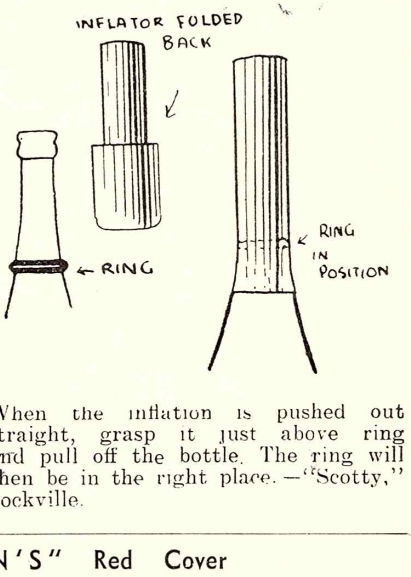
WASHING THE SEPARATOR

A handy receptacle for washing the separator in can be made from an old separator bowl. Turn the bowl upside-down on the washing bench and mark round it. Cut the circle out, push the bowl up from the bottom and nail with 1½in. nails. Do not let the lip of the bowl project above the bench. You can now take the tap out, and let the water go, without the necessity of putting the bowl away, or knocking holes in your vat.—Farmer, Pahiatua.



FITTING INFLATION RINGS

The sometimes difficult job of inserting the ring into the teat-cup inflation can be simply and quickly done as follows:—Dip an ale bottle in water and put the ring over the neck of it. Now take an inflation, double back about ¾in. and push over the neck of the bottle. Work the doubled-back part of the inflation forward over the ring.



When the inflation is pushed out straight, grasp it just above ring and pull off the bottle. The ring will then be in the right place.—"Scotty," Rockville.

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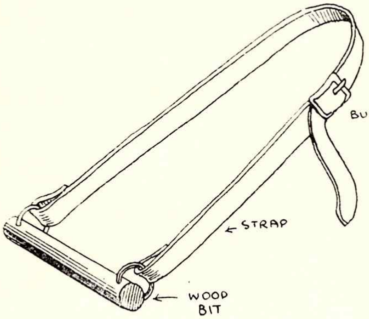
OBSTRUCTION IN THROAT

When a cattle beast fed on root crops gets a piece lodged in the throat make a bridle with a wooden straight bit. A piece of an old shovel handle is the correct thickness for the bit. Saw this off to about 9in. long, and attach a fairly large wire ring to each end (to prevent the bit from slipping out of the mouth). Attach a strap to the rings to pass over the head, with buckle for adjustment. If the cow is quiet enough to be cornered and caught one man can put the bridle on by hanging it over his left shoulder and catching the beast by the nostrils with finger and thumb. Then work the bit in the mouth with the right hand and slip the strap up over the head and adjust the buckle before letting the nostrils go. The obstruction in the throat prevents the gases from escaping from the stomach and this blows the beast, but once the wooden bit is in the mouth this lets the gases out. Next morning the cow will be back to normal and the obstruction gone. The bridle can then be taken off.—"Sure Cure," Mokau



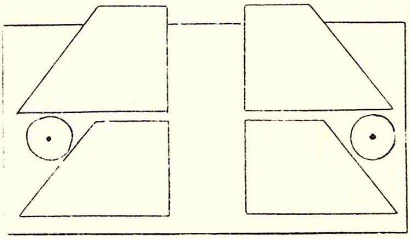
TEAT OINTMENT

For healing rashes and cracks on cow's teats I have found the following remedy very good, as well as economical. Melt together 1lb. of mutton fat, one cup of coarse castor oil and three-quarters of a cup of kerosene. Stir well until cold. This is also good for chapped hands.—A.J.L., Linton

An effective ointment for healing chapped and sore teats on dairy cows can be cheaply made as follows:—One small bottle of castor oil, one cup of carbolic oil and enough fat to fill a 5lb. tin. Both oils heal, while the fat keeps the teats soft and healthy. I have used this ointment for years and have known other farmers to find it extremely good when applied before and after milking.—J.C., Wairoa.

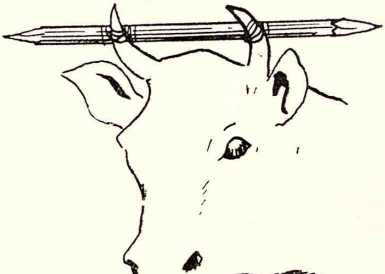
PULSATOR OILER

Where the slide type of pulsator is used on milking-machines, to save a lot of work with the oil-can, drill a hole in the slide, ½in. deep with a ⅜in. or ½in. drill; taking care not to pierce the bottom of the slide. Then drill a 1-32in. hole through the bottom of the slide. Fill the large hole with oil, which will gradually seep through the fine hole, thus supplying a constant film of oil on the slide. Cork the big hole lightly to keep out dust. With certain types of slide, a hole each end should be drilled.—"Farmer's Lad."



FOR SUCKING COWS

There is no simpler device to prevent a cow from sucking herself than that shown in the sketch. The stick should be of hardwood and the ends sharpened and firmly bound to the horns. It can be removed when the cow loses the inclination to suck, which will usually be in a short time.—R.H.H., Whakarongo.



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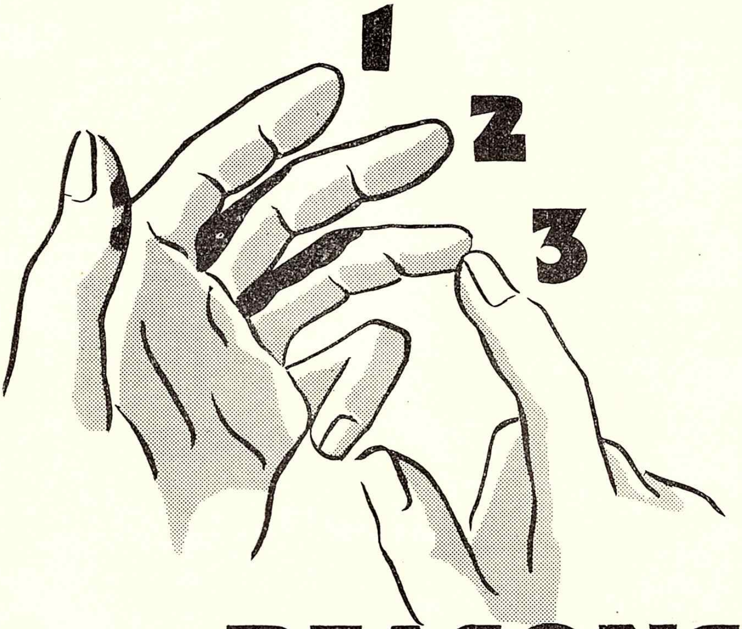
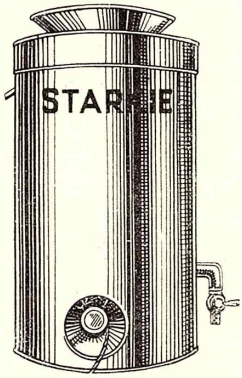


REASONS

Why You Should Install a "STARKIE"



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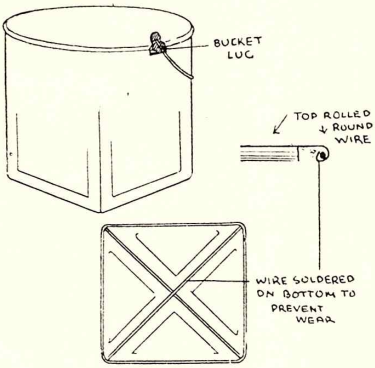
CHEAP MILK BUCKET

Cut down a good clean tin so that it is about three-quarters of its original height. Work out the corners at the top until it is nicely rounded, then with a pair of pliers commence turning over a ½in. lip all round the top. This is simple if one works round the top several times, turning the edge out slightly more each time. When the edge is worked out at right angles to the sides, take a piece of No. 8 fencing wire slightly longer than the circumference of the top of the tin and commence by turning the lip over one end, then work right round, bending the wire as the edge is worked over it. When within an inch or so of the starting place cut the wire so that the two ends just fit together. The tin now has a rolled top that is very rigid as well as neat. Two old bucket lugs may be riveted on the sides or even holes punched for the handle. If two pieces of wire are soldered diagonally across the bottom it will stop the edges wearing out on the concrete floor. This type of bucket is easy to grip with the knees, whereas one with a round bottom is inclined to roll.—C.F.P., Nelson.

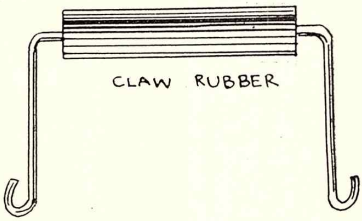


CLEANING CONCRETE SHED

Much time can be saved when cleaning the concrete floors of sheds by using the following method: Before milking cover the whole surface with water; this prevents dirt and mud from sticking to the floor, which does not need any scrubbing. This method is very simple, and also leads to a great saving in brooms.—J.A.L. Tirau.

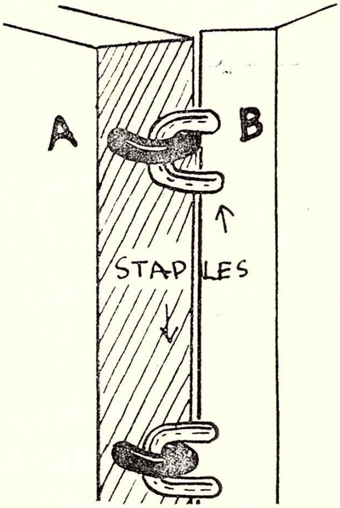
WIRE HANDLE GRIP

To make a handy handle grip on kerosene tins, cut a piece of claw rubber, about 4in. long to cover the hand grip. This rubber grip prevents your hands from being hurt by the narrow wire while lifting heavy weights.—"Ben." Mahia.



A SIMPLE HINGE

This hinge serves very well for the door of a small cupboard or for the lid of a box in the cow shed. Get two staples the same size and file the points off so that they will not split the wood Now hammer one into the edge of the article as shown at A, and link the other staple in to the other and hammer into lid, B. When fixing staples into the wood make sure you do not leave too much play; if you do the door or lid will wobble.—"Digger," Tophouse



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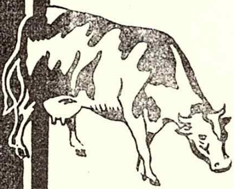

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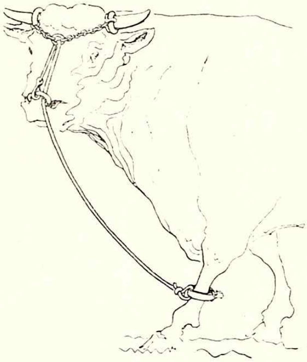
FENCE-BREAKING BULLS

To control the savage, or fence-breaking bull, take two rings, and place one over each horn. Then join a light piece of chain across the forehead with a big link in its centre for a rope to run through. Then, with a piece of plough line, with a snaplink fastened to one end, hook the snaplink to the ring in the bull's nose. Take the other end of the rope up through the big ring on the bull's forehead and down through the ring in the bull's nose. Buckle a strap on the bull's front leg and fasten the rope to pull the head down, according to the temper of the bull. It will be found that he can feed and lie down, but cannot get his head up to do any damage. This will effectively control a bull that is hard on fences or inclined to rush. A couple of old rubber rings off the releaser, or milk pipes put on the horns first, will stop the rings from hurting the bull's head, and a couple of old inflations on the chain across the forehead is an improvement. —"Jimmy," Kiterangi.

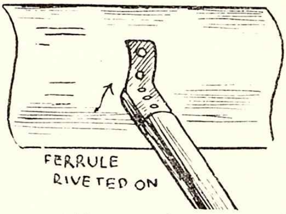


BROOM RACK

A simple device to prevent the cow-yard broom and shovel from being blown or knocked down with resultant broken handles is made as follows:—In the top rail of the dummy bore two ⅜in. holes about one inch apart (depending upon the size of the broom handle). Take a piece of No. 8 plain wire and pass the end through one of the holes, bring it back through the same hole forming a loop about two inches long and three-quarter inch wide. Pass the end through the other hole and return forming a similar loop, and staple the two ends down. This forms a space into which the broom handle fits. The springing action of the wire prevents the broom coming out unless pulled. Bore another hole alongside and through this pass the two ends of a wire bent to form a hair-pin. Staple the ends and form a hook on which to hang the shovel.—"Farmer," Waiuku.

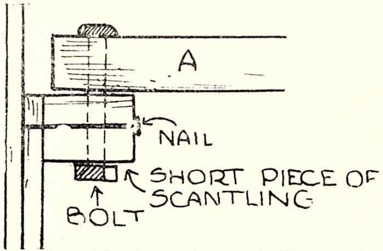
COW-YARD SCRAPER

Cut a piece 18in. by 8in. out of a 40-gallon drum-lid and bend into the shape shown in illustration. Then cut out a piece about 18in. by 2in. for a ferrule and drill it as required. Bend back flanges and rivet to the centre of the scraper. This can be used either to pull or push.—"Interested," Shannon.



COWSHED DOOR HINGE.

The sketch illustrates how a strong and cheap swivel or hinge can be made by the farmer himself for the "walk-through" doors in a cow shed. Cut a piece of scantling 3in x 2in and 6in long. Bore a hole through centre of flat 3in side to take a half or three quarter inch bolt. Nail this on to the door. Next bore a hole through the opening and closing lever A near the end. Through these holes put the bolt, and the swivel is complete.—"J. E. M.," Mohaka.



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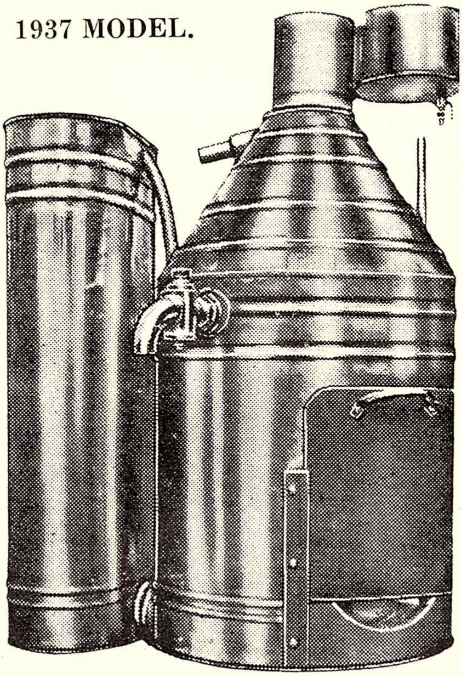

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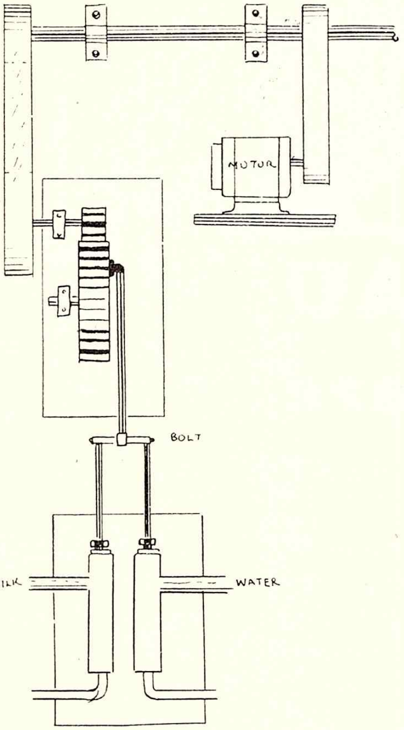
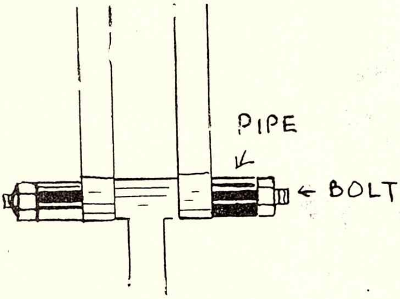
COUPLED PUMPS

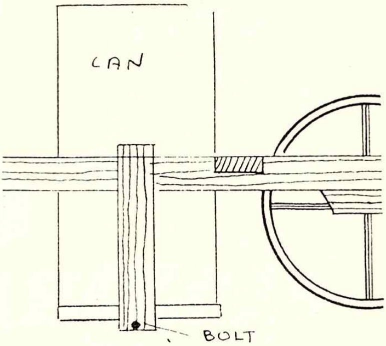
It is frequently an advantage to have two pumps coupled to one source of power, thus enabling both skim milk and water to be pumped at the same time. How this can be done is illustrated in the accompanying diagram.—J.R.W., Tangimoana.





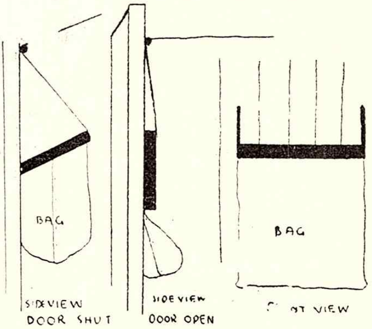
CREAM CAN BARROW

The accompanying sketch clearly illustrates the constructional details of a cream can barrow which is cheap to make and easy to wheel. It will be found useful for many transport jobs on the farm.—C.S., Roto Ohura.



A BRAN FEEDER

If it is desired to feed bran or other supplementary concentrated food in a walk-through type of shed, for each exit door make a hoop of iron bar 3-8in. in diameter bent so as to form a swinging oblong when stapled to the door. A bag is suspended from this, and it is supported by a length of light rope. The latter passes through a pulley attached to the top of the door and is attached to the rail on which the door-opener rests, allowing just enough slack so that when the door is opened the bag falls flat against the door—allowing the cow to pass—and when shut supports the wire frame so that the cow may eat from it while in the bail.



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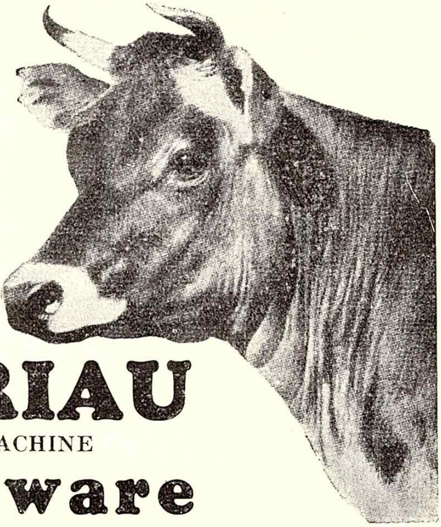

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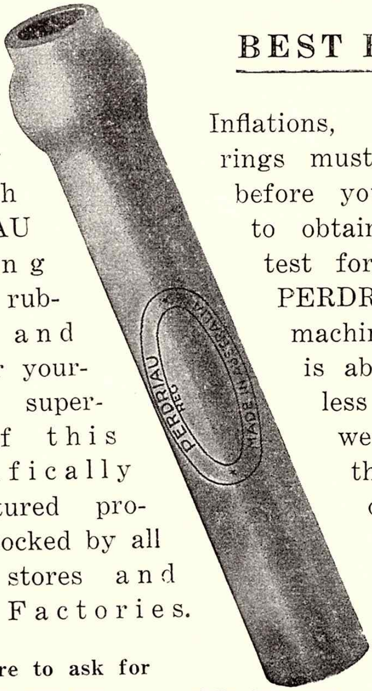

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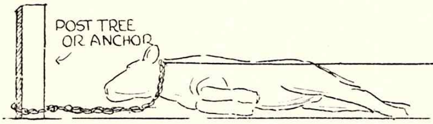
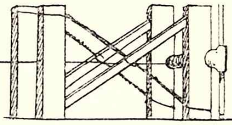
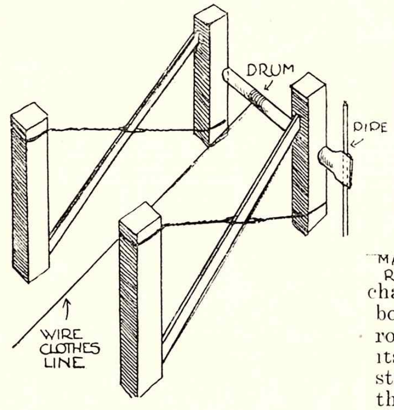
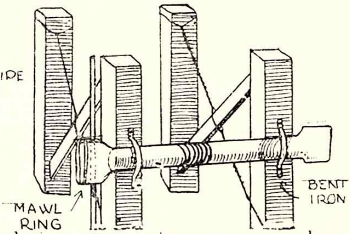
SKINNING BOBBY CALVES



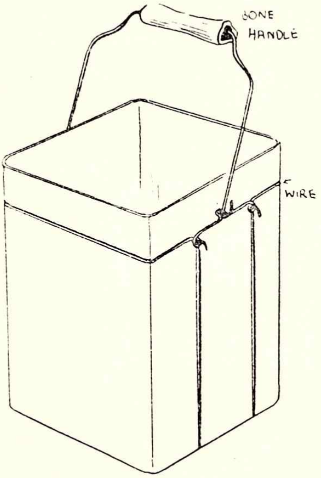






To construct a home-made winch for skinning calves, place two strong posts in the ground about three feet apart. Tamp and stay well. Take a chisel and cut a D in each post about half-way up, and below the stays. Trim a lighter post "round" to act as a drum, leaving the ends square to avoid slipping out. Bore an inch hole in one end of the drum. Bind the end with wire (or fit a ring). Hammer a 3ft. length of 1in piping through the hole to act as a crank. Put the drum in position, bend a couple of bits of iron and screw into the posts to keep the drum in place. If no tree is available put in another post about ten or twelve feet back and in the middle. Skin the calf's neck and open up. Get an old trace chain and tie to rear post close to the bottom, leaving hook end free. Pass round the calf's neck and hook on to itself. Get a piece of wire clothes line—staple to drum Take the other end to the calf. Place a round stone between the calf's ears. Make a slip-knot in the wire and pass round this stone. A few turns on crank and the skin comes away quickly and easily.—"J.V.," Hikuai.

KEROSENE TIN FRAME



A combined handle and frame for a milking tin not only protects the tin, but can be taken off quite easily by just lifting the tin up through the top. The frame can be made as follows:—Take a piece of No. 8 fencing wire, long enough to go right round a kerosene tin, and allow about six inches extra for making loops (one in the centre of each of two sides for the handle to hook into, and two loops, each equal distances from the centre top to corner of tin, in each of the two sides). These four loops should point downward. Next take two pieces of wire of the same gauge and long enough to pass under the tin and hook into the corresponding loops.—P.I.P. Martinborough.

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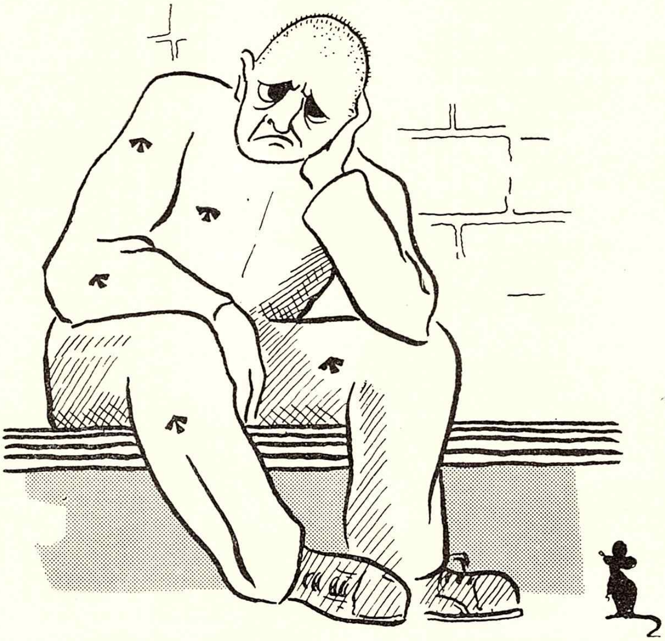

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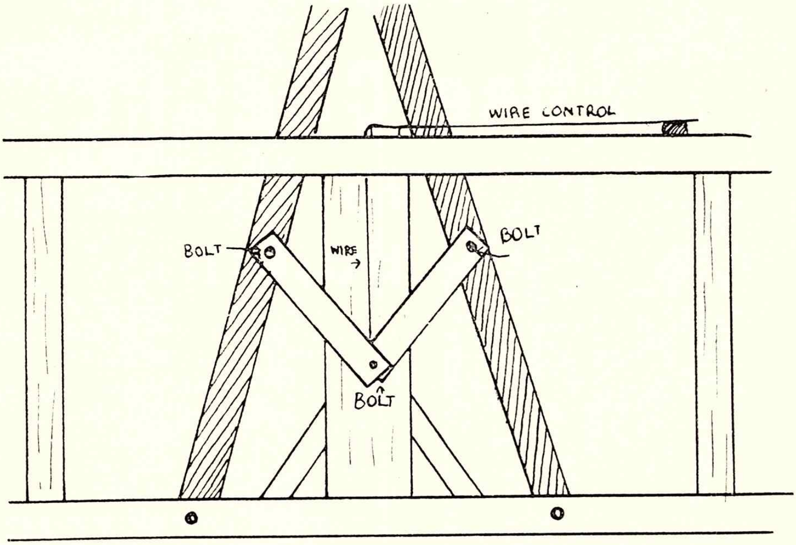

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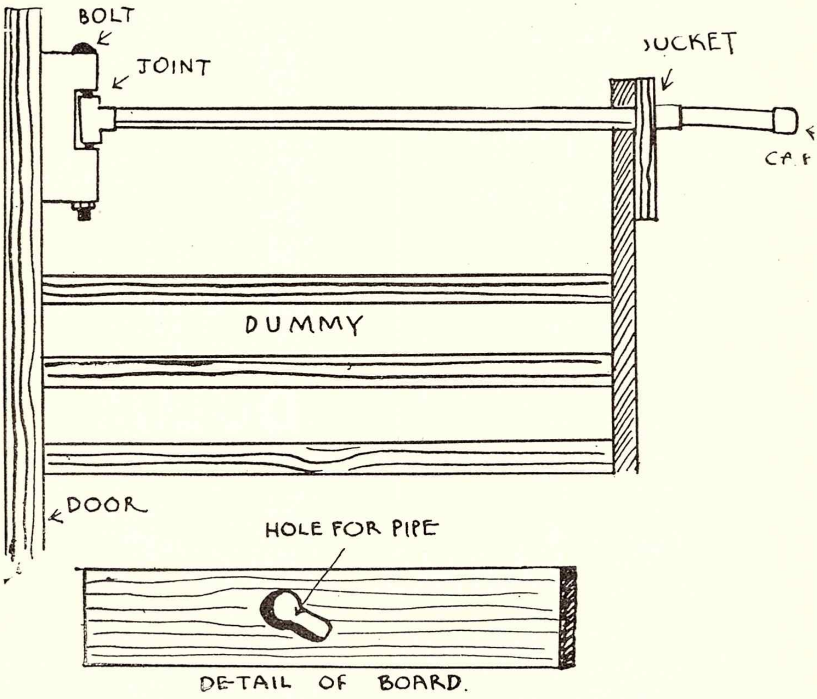
PIPING COWSHED DOOR LEVER

The levers for opening and closing the "walk through" doors of a cowshed can be made of ½in. galvanised pipe. They are easily cleaned, light, and not easily broken or damaged. It requires 6ft. of pipe, one T, one socket and a cap; also one 6in. bolt, ½in. prefered. Take a block of wood 3in. by 2in. by 6in. and bore a ½in. hole through it lengthwise. Then cut out a piece wide enough to let the socket in on one side. Then nail the block to the door. Four feet back, cut the pipe and put in a socket which acts as the stay for the door handle. Bore two holes through the board at the back of the dummy: one 1½in. hole which will easily let the socket through and the other hole 1in. a little below and two inches to one side. Then, with a key-hole saw, connect the holes. When the socket is pulled back through the 1½in. hole it can be slipped sideways to the 1in. hole which will hold it. The end of the pipe has a cap screwed on it —O.W., Kohukohu.



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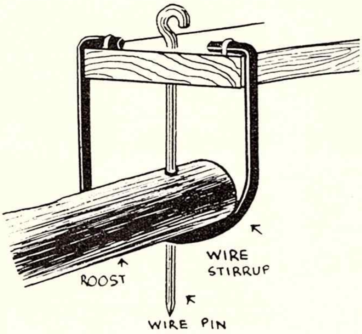
CHAPTER VI.

IN THE POULTRY RUN

SUSPENDED PERCHES

Suspended, movable roosts or perches in the fowlhouse will protect fowls from redmite. To fit these use wire stirrups attached to each side of the house. These carry the roosts which project through the stirrups about 1½in., and have holes bored through near the ends for wire drop pins, which prevent them coming loose or turning round. The roosts can be easily removed, kerosened and replaced.—C.C., Gisborne.

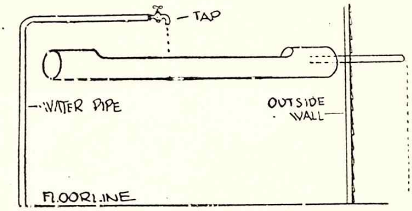


HINT ON FUMIGATION

Directed into a poultry house through a pipe or hose, carbon monoxide gas from the exhaust of a motor-car or tractor will kill lice and mites, as well as spiders, bugs and flies. Seal the doors, windows and cracks as tightly as possible. Then set the carburettor to produce a rich fuel mixture, and let the motor run for several minutes. The gas will penetrate all parts of the building and kill every living thing inside. This method will be found to be very cheap and exceedingly effective. Of course, ventilate the house well before re-entering it or replacing poultry.—"Van," Christchurch

DRINKING TROUGH.

Take a piece of galvanised down pipe about three inches in diameter and of any desired length. Cut out an opening at the top as shown, and turn the edges in. Solder up both ends, and at one end solder an overflow pipe, on a level with the water when full. Put the overflow through the outside of the poultry house—connect with the water supply and allow the tap to drip. There will then always be a supply of fresh water and the overflow pipe will keep the house dry. Put the trough on brackets about three or four feet from the floor and provide a board for the fowls to stand on when drinking.—C.D.P., Havelock North



GUARDING AGAINST RATS.

Here is a good idea for keeping rats from young poultry. Rodents often burrow under the coop and gnaw through the wood. Put four small posts firmly in the ground, leaving them 1ft or 15in high and squaring them on top. Lift the coop on to these posts after the poultry are shut up for the night and lift it down in the morning. Since I have started this idea I have had no trouble with rats and can recommend it.—F.R.L.H., Awa-iti

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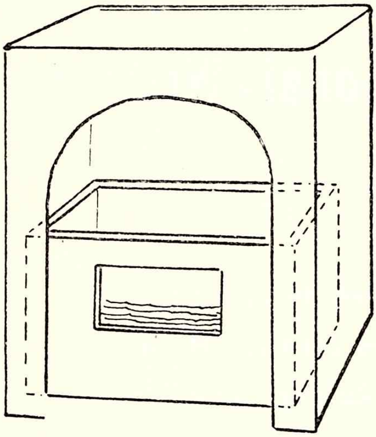
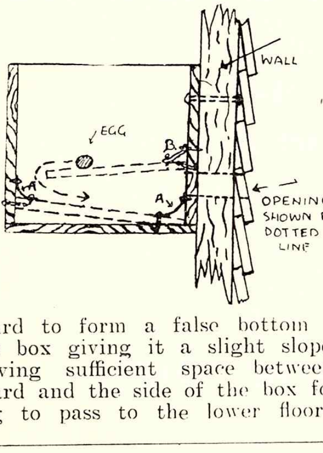
UNRUSTABLE TROUGH

An ordinary tin bucket as a container for the fowls' drinking water rusts through quickly, but if an old battery case with the divisions knocked out is used, it will last indefinitely. A cover can be made out of an old bucket, as in the sketch.—F.B., Havelock North.



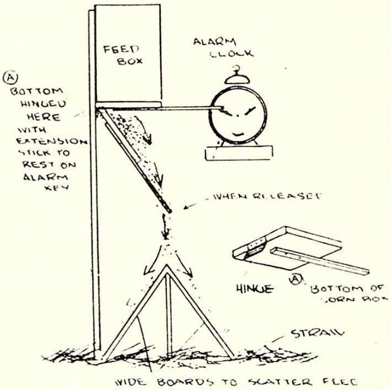
SAFETY NEST

To prevent fowls eating their eggs make the nest in the following manner from a butter box, which should be nailed or bolted to the wall. Nail a board to form a false bottom inside the box giving it a slight slope and leaving sufficient space between the board and the side of the box for the egg to pass to the lower floor. Cut an opening with a keyhole saw through the wall of the house and side of box between the false and true bottom of the box to get the eggs out. A piece of canvas should be tacked at "A" to prevent the egg from breaking. A wire support should be fixed at "B." You will find that this nest gives very good results, for it not only prevents hens from eating eggs, but also saves time and disturbing the hen.—"Farmer," Lower Moutere.



AUTOMATIC FEEDER

To save the necessity of coming home to feed fowls with grain in the evening, put enough corn in a box having a hinged bottom. Rest the extension from this hinged bottom on the alarm of the clock. Set the alarm for any hour when feeding is required, and when the alarm goes off the extension on the alarm winder drops off and allows the bottom to drop, thus releasing the wheat, which falls on to a spreader. If used regularly the alarm will also call the fowls to their feed.—W.W., Stoke.


FEED BOX
ALARM CLOCK
Ⓐ BOTTOM HINGED HERE WITH EXTENSION STICK TO REST ON ALARM KEY
WHEN RELEASED
HINGE
Ⓐ BOTTOM OF CORN BOX
STRAW
WIDE BOARDS TO SCATTER FEED

REMOVABLE ROOST

A roost which is very simply erected and handy can be made of a piece of slightly-rounded 2in. x 2in. board, with a hole bored at each end. This board is slipped over two pieces of old piping as uprights, which are sunk into the ground. As this top is removable, the roost does not hinder the cleaning of the fowlhouse.—R.S., Christchurch.

F. A. M. E.
Refer Page 36

Farmers — And Harmers

Thought on National Welfare

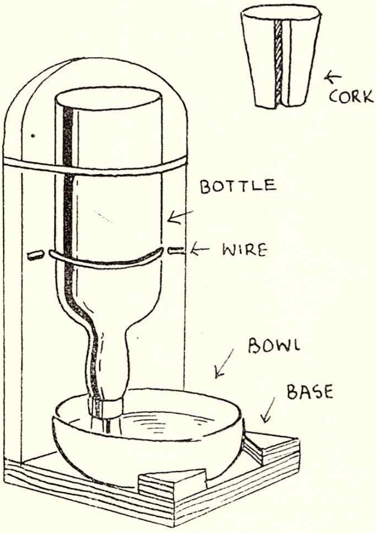
No farmer wishes deliberately to be a harmer of himself, his family or his country, He sets out to work by the Golden Rule of a Fair Deal.

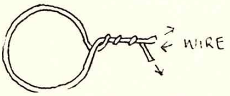
He knows that the railways—of which he is one of the owners—are necessary for his welfare with their low rates for heavy freight, inwards and outwards. Therefore, in his recognition of the basic principle of the Fair Deal, he will also use the railways for the smaller lots of goods on which the rates are necessarily higher. Otherwise the charges on heavy low-rated goods would not be so attractive. Lopsided treatment of the railways is harmful.

One Good Turn Deserves Another!

BOTTLE FOUNTAIN

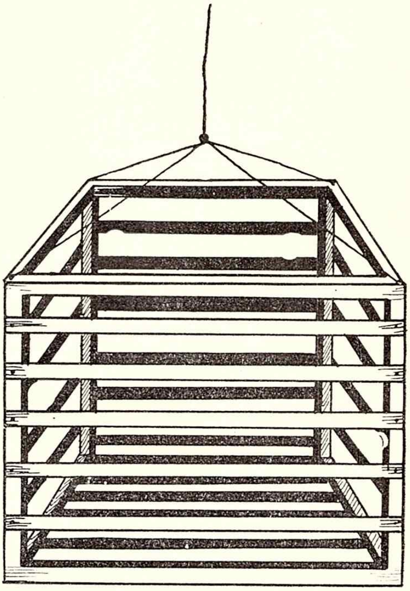
A drinking fountain for a small poultry run can be made from an ordinary wine bottle, supported against a wooden back. The neck rests in a shallow bowl. The back is made of a piece of three-quarter-inch wood, 15in. by five inches. The top is the shape of a semi-circle. The stand is five inches square, of three-quarter-inch wood, firmly screwed to the back. A 12½in. length of galvanised wire is bent over to the curve of the top, the ends taking a screw on either side. A further support, at a height of five inches, consists of a 12in. length of wire, looped to take the neck of the bottle. (In making same, bend the centre around the bottle neck to be used, and twist the two ends for a distance of one and a-half inches.) Drill three holes; one in centre and the others one and a-quarter inches away. (Centre hole a trifle larger than the others.) The ring should be so adjusted that the neck of the bottle can pass through it. The ends of the wire are bent at right angles at the back, and then brought through the holes to the front and pressed back quite flat. The dish is held in position with two screwed-on triangular blocks. The cork should project about three-quarters of an inch, and have a V-shaped cut for its complete length to allow the water to flow out as air enters to replace it. To use, nearly fill both dish and bottle with water, invert the bottle (slipping it through both wire rings) and let it rest on bottom of dish. The drinking fountain should be placed in a convenient position, at least six inches from the ground, and the bottle will keep the dish filled for several days without further attention.—"Green Parrot," Martinborough.





COOP FOR BROODY HENS

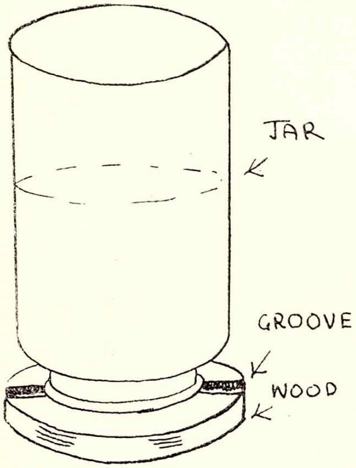
The best and most humane method of discouraging broody hens from sitting is to place them in a crate, constructed as in the illustration, and suspend this in the fowlhouse. The door is in the top, and both sides and bottom are made of laths 1½in. wide and the same distance apart. Make the frame of 2 x 2 inch timber, and measurements 20 x 20 inches will be found sufficiently big.—"Crow," Otoko.



Protection of Previously Published Inventions is Useless—
Consult A. J. PARK & SON, PATENT ATTORNEYS, AUCKLAND.

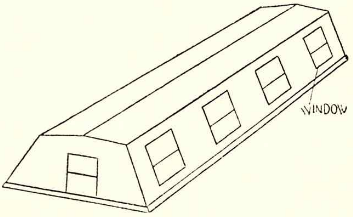
WATER FOR CHICKS

Several people have remarked on my method of giving water to day-old chicks, so I am passing on the idea for what it is worth, even though the season is rather advanced for some to take advantage of it. The articles needed are a preserving jar, a circular piece of wood and a saucer. The jars I use are a little larger than the ordinary 2lb. jam bottle. The wood needs to be about half an inch thick, cut large enough to show a half-inch margin round the mouth of the jar, and the groove cut ¼in. deep and about ½in. wide. Get a large, deep saucer; the shallow kind are no good for this purpose. For a start only half-fill the jar with warm water (warm water is best for the chicks). Place the wood, groove side down, on the mouth of the jar and place the saucer on the wood. Hold the jar with the right hand on the bottom, keeping the saucer and wood firmly in position with the left hand and smartly invert the whole lot. Until one gets expert at this it is best to do the inverting outside the chicken house. Place the lot on a wide, short piece of board; the top of a kerosene case will do. This helps to keep the chicks from scratching chaff into the water. The water will run out into the saucer, until the groove is covered, when no more will come out until the chicks start to drink. As the chicks get older, raise the board by placing two short bits of 4in. x 2in. under it on their flat and later, on their edge. This method is for chicks from a day old up to about six weeks old, at which age they jump on top of the jar and sometimes upset it. With three jars, etc., I water chicks in lots up to 400. One can see when the water is getting low. What is of greater advantage, I never have any wet chicks. Remove the jars when bedding the chicks down at night, and give fresh, warm water in the morning.—Handy A., Weston.



ECONOMY POULTRY HOUSE

A poultry house, built as shown, has many advantages over the usual type. The overhead is reduced without sacrificing the floor space, thereby effecting a saving of 20 per cent in material. The walls are built at a 60 degree angle, which allows the sunlight to reach the entire floor through the windows. The more constant temperature possible in this type of building decreases mortality and increases profits. —Jack, Ruatoria.



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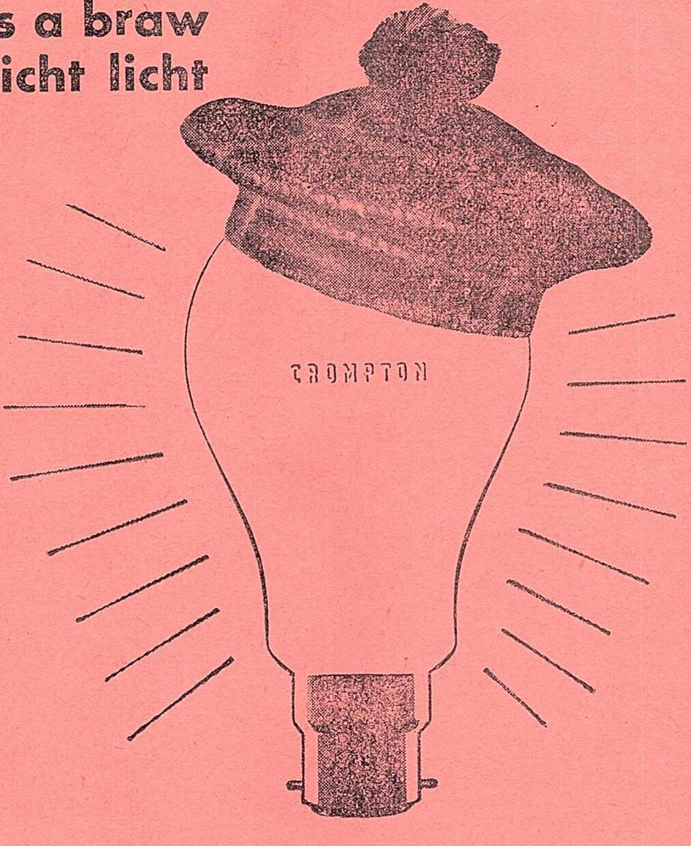

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A GOOD GARDEN Deserves "Black Leaf 40" PROTECTION

If you would enjoy the delights of a good garden your vegetables and flowers must have protection against insect pests. Experienced gardeners everywhere guard their gardens with

"BLACK LEAF 40"

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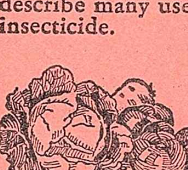
Directions on label and free leaflets tell how to kill certain insects and describe many uses for this versatile insecticide.



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Worms in sheep cost you money—save by drenching. Agricultural Colleges recommend a solution of copper sulphate and "Black Leaf 40" as a cheap control. Directions are given on packages' labels. ● Drench your flock and get rid of stomach worms.

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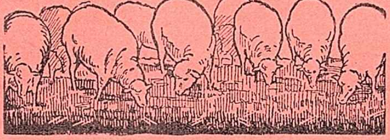

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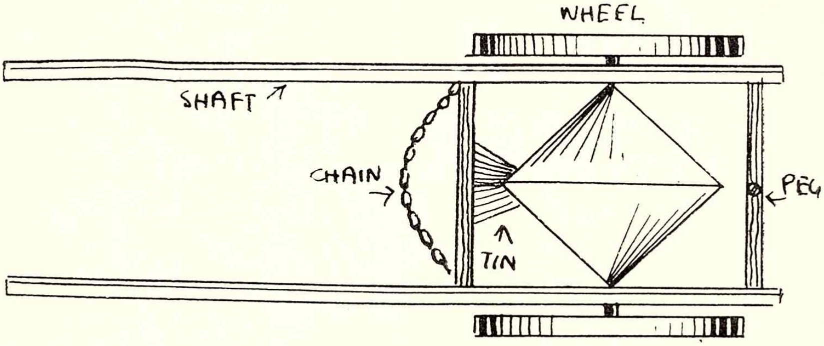
JUST A DASH IN FEATHERS..

OR SPREAD ON ROOSTS

CHAPTER VII.

GARDEN AND ORCHARD



A CHEAP SEED BARROW

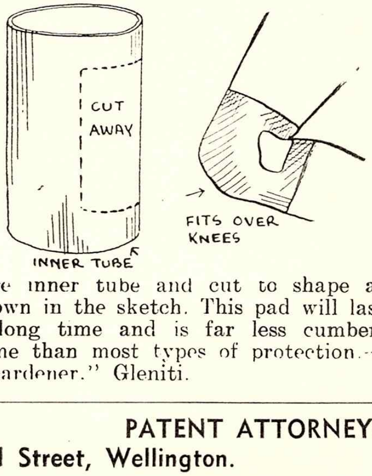
Quite a useful little seed sower for turnips and other small seed can be made by mounting an old cannister (out of a drill) between two light wheels (2ft. in diameter). As the seed falls from the revolving cannister it is conducted by a piece of tin, fashioned to form a spout, into the furrow made by a peg placed immediately in front. The frame is made of light wood and is very easy to push. For covering the seed attach a chain to the frame and you have completed an implement which you will find very useful for re-sowing blanks in your root crops, and for garden use.—"Chaffy," Waihola.

SIMPLE SEED SOWER

To sow small seeds such as turnips, peas, etc, with expedition, mix a quantity of seed with artificial manure, ground lime, dry sand or soil. To make the distributor, take a sound old teapot of fairly large size, and cut an inch or two off the spout. Put the seed or mixture in this, and sow through the spout, using an up and down movement combined with a swing. To make a furrow or hole, a piece of light, flat iron may be attached as a permanent fixture to the bottom of the distributor. It will serve to cover the seed also. This tool is invaluable in "patching" or filling in blank spaces in rowed crops.—Hustler, Rangitata.

KNEE PROTECTOR

For work such as weeding entailing kneeling, suitable knee protection is required to ensure maximum ease and comfort. Take a length of old motor-tyre inner tube and cut to shape as shown in the sketch. This pad will last a long time and is far less cumbersome than most types of protection.—"Gardener," Gleniti.



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●

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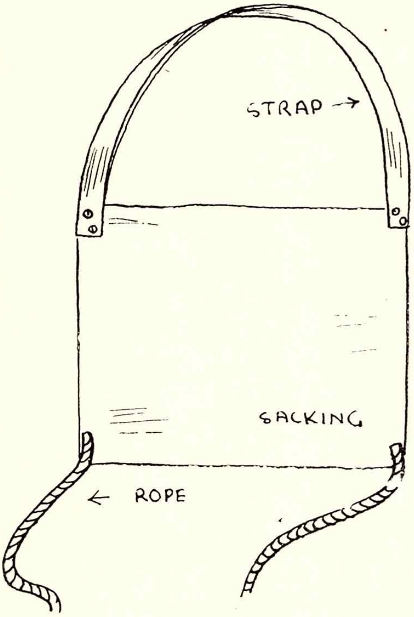
POTATO-PLANTING HINTS

The following idea for carrying potatoes while planting is in every way more convenient than buckets. Take a piece of scrim or bagging, and tie two pieces of rope to the bottom corners, to go around the planter's waist, and a wider strap to the other corners, as in the illustration, to loop over the shoulders. In this way the weight is carried on hips and shoulders, leaving both hands free. To fill, lift the loop over head and lay sacking flat on ground, and for planting both hands can be used alternately to drop the potatoes along the furrow.



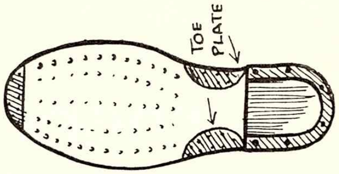
—T.D.R., Motueka.

USE FOR OLD TYRES

To prevent narrow wheels such as those of a wheelbarrow from sinking in lawns or soft ground, cut an old motor tyre to fit the circumference and wire the joins tightly to the wheel. This does not make the barrow any harder to push and is a great help to gardeners. The idea may be applied to trolleys for carting out turnips in wet weather.—"Chaffie," Waihola.

FOR DIGGERS

To prevent working boots from being cut by the shovel, nail two toe-plates into position as shown in diagram.—"Ben," Mahia.

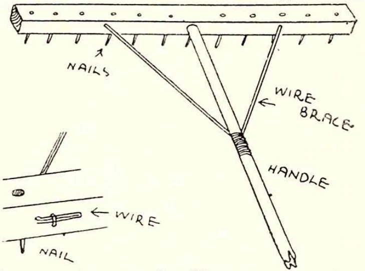


WEEDING TOOL

A weeding implement which will be found to be of exceptional value because of its grip and lightness and also because you can manipulate it among the flowers or vegetables, can be made from three pieces of strong fencing wire about 1ft. long, and a short piece of round wood for a handle. Twist the wire together, leaving about 3in. at the end to bend and spread for claws. The ends should be flattened with a hammer. Then attach the twisted ends to the handle and rivet.—"Weeder," Waikato.

GARDEN RAKE

This rake was made from 5-inch square galvanised nails driven through bored holes in the head 2½ inches apart. The head was made from an old oar, and the handle from manuka. Put the thin end of the handle through a small hole in the head. The brace wire is bent over after passing through holes in the head, and the ends should be fastened with small staples. The head should be tapered to each end. This rake is excellent for gathering hay or rubbish, and also for raking a large garden for vegetables.—N.H., Takaka.



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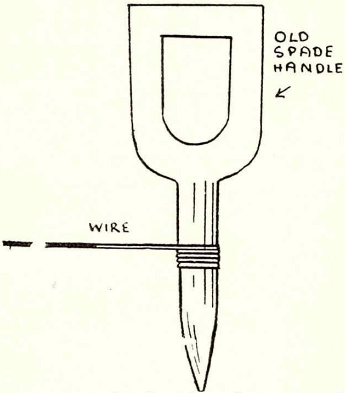
SPACING GARDEN PLANTS

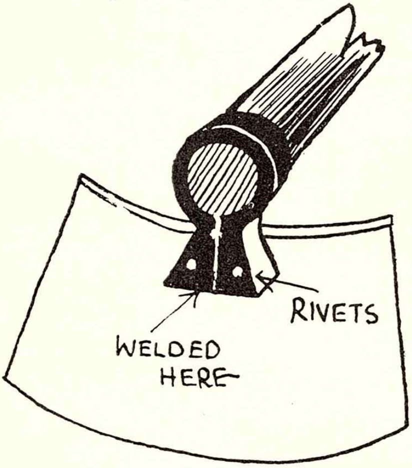
Take a suitable piece of stick to make the holes with (I use the handle of an old spade). Tie a piece of wire around this just far enough up the stick to allow for the correct depth of the hole.



Leave one end of this wire projecting for the distance required between the plants. This wire will leave a mark on top of the ground, and will show exactly where the next plant should be put in.—Old Faithful, Nuhaka.

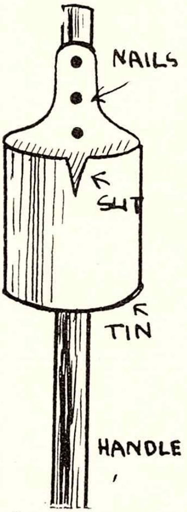
HEAVY GARDEN HOE

To make a servicable garden hoe from an old chaffcutter blade, cut the blade to the length required for the size of hoe. Secure a piece of horseshoe iron 1in. by ½in. by 6in. long. Bend it round a piece of 1in. round iron to make the hole for the handle and weld the two ends together. Flatten them down to about ½in. in thickness and rivet on to the blade as in the diagram.—"Farmhand" Havelock North.



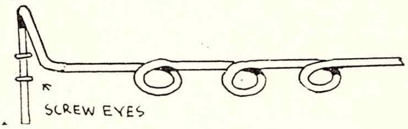
FRUIT PICKER

Take an empty can—almost any small cylindrical tin will do—and with tin snips cut to the shape shown. Clout tacks or short large-headed nails may be used for attaching it to a suitable long stick. This will prove very useful for picking figs, passion fruit or any other which may be out of reach and which would be damaged by falling. In this case the fruit falls into the can.—N.I.H., Takaka.



WIRE TRELLIS

A string trellis attached to the side of the house with staples or nails, is not only difficult to remove but damages the paint. To avoid this, and at the same time provide a trellis support which will be neat and practical, bend a heavy wire into loops as shown, and drive screw-eyes into the wall to receive it.—" Duffy " Nuhaka.



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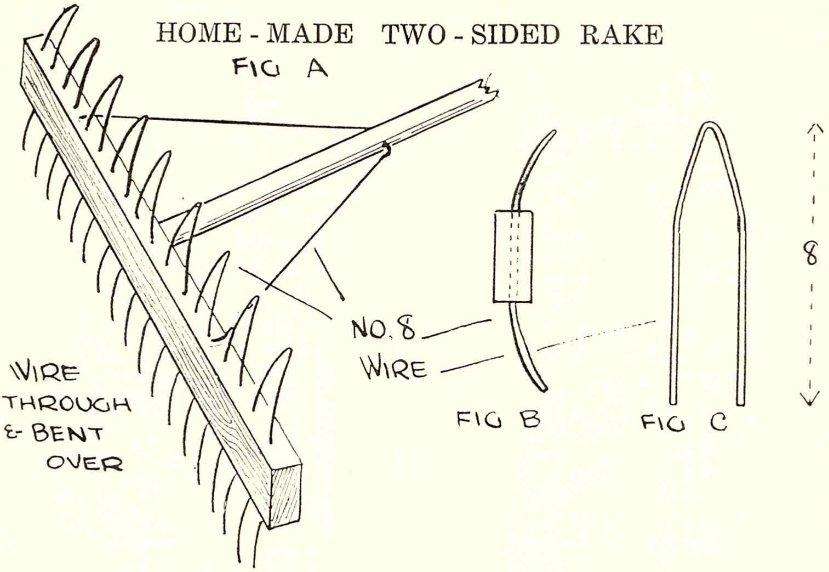
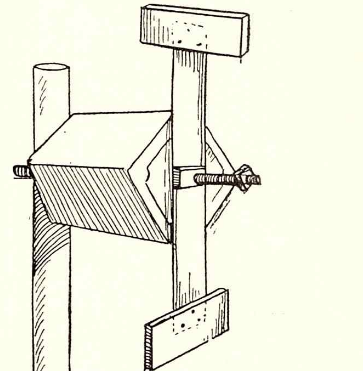
HOME - MADE TWO - SIDED RAKE



Take a good hard piece of wood 28in. long of 2in. x 1in. and drill it with holes evenly spaced. Now cut eleven pieces of No. 8 wire 16in. long and bend as in figure (c). Now push these through the holes which should be a tight fit and bend to shape. Next take an old handle and fit, using a piece of No. 8 wire for support as shown. This rake will not keep catching in the grass if used blunt side down.—"Helper," Awapuni.

EFFECTIVE SCARECROW

To make an easy and inexpensive bird-frightener the materials required are: One 3ft. piece of straight-grained 4 x 2 timber, two pieces of thin pine board 1ft. x 6in., a 7ft. length of sapling, a 2ft. x ¾in. bridge-bolt or other piece of round iron, a kerosene tin and a round tobacco tin. When preparing the fan it is a good plan to make a few extra saw-cuts in the timber, as in sketch No. 2. It is necessary to drill three holes pointing in different directions through the top of the post so that the fans can be set facing the wind. Do not forget to put a small stone to act as a rattle in the tin. Place the tobacco tin, punched through the centre, between the post and the kerosene tin. It is better not to attach the fan to the tin, for if left free, even a light wind will set the former revolving, and when sufficient speed is attained the fan will grip the tin and turn it. Finally, do not erect the device near your neighbour's residence!



—F. H. W., Morven.

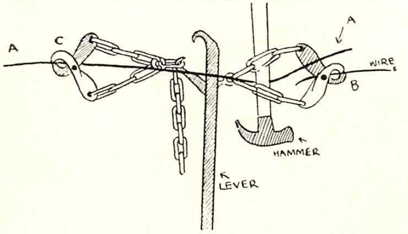
NECESSITY IS OFTEN THE MOTHER OF INVENTION —
So Father Your Ideas for Profit — See Page 144.

CHAPTER VIII.

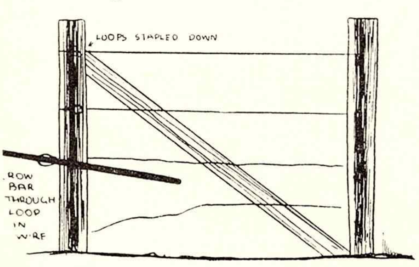
IDEAS FOR THE FENCER

STRAINING THE FENCE WIRES.

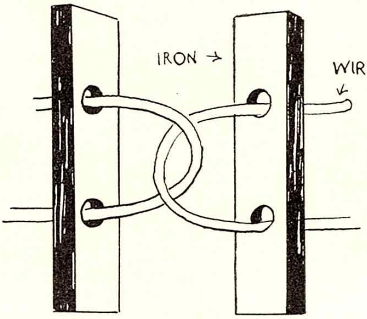
A fencer often needs to take a fresh grip with his strainer, when straining a long stretch of new fencing. To do this, when you have strained up to the last link in your chain, take wire A over the lever and down through the grip B. Insert your hammer between the wire and the grip, and then bring wire A up and over grip B. Release the strainer and slip grip C back along wire A.—Mack, Te Pohue



Many small farms have not a wire strainer. Here is a simple method of tightening wires, more especially when putting up a temporary fence. When putting on your wire, leave about a foot of wire over at the corner post. In this, make a loop, putting the crowbar through and levering round the post. Staple tight, take the bar out and staple the loop round the post. By leaving the loop on the end of the wire instead of filing it off, the staples can be taken out at any time and the wire re-strained.—H.C.S., Richmond



For joining wires in a fence so that they can be tightened again if necessary without cutting the knots; take two pieces of iron about 3in. long of any thickness, and ½in to 1in. wide. Bore two holes in each piece 1in. apart, and thread the wire through the holes as in the diagram, making sure the pieces are as close together as it is possible to get them. This will hold without slipping against any strain.—T.N.P., Picton.



STRAINING NEW FENCES

Best results can be obtained when straining up the wire on a new fence by using three strainers, or other straining gear. Use a wire strainer on each of the top and bottom guide plain wires, keeping them on all the time. When the posting is finished, use the third wire strainer for straining the intermediate wires. It will always be found that the top or bottom guide wire has slackened off while straining the middle ones. It is then just a matter of pulling them up as the wire strainers are on them already. I always use the older wire strainers for holding the two guide wires while straining the middle ones.—"Hicks Bay," East Coast.

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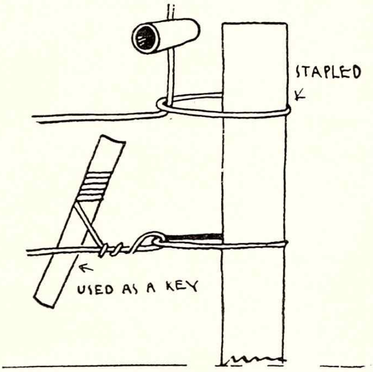
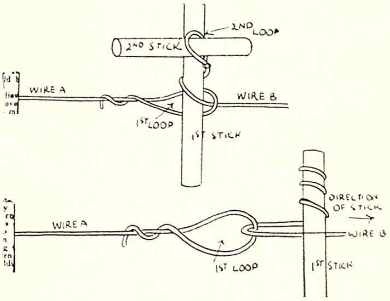
INEXPENSIVE STRAINERS

To make a cheap wire-strainer take a piece of 1½in. pipe a foot long. Drill holes in it. In using the strainer, wire loops are put around the post and the wire to be strained is brought up through the loop from the bottom and put through the centre hole on the strainer. The lever-bar is then put through either of the end holes and twisted round and round until the wire is tight. Then pull back along the wire twisting back on the wire to tie and unrolling off the strainer at the same time.—"Shepherd," Feilding.

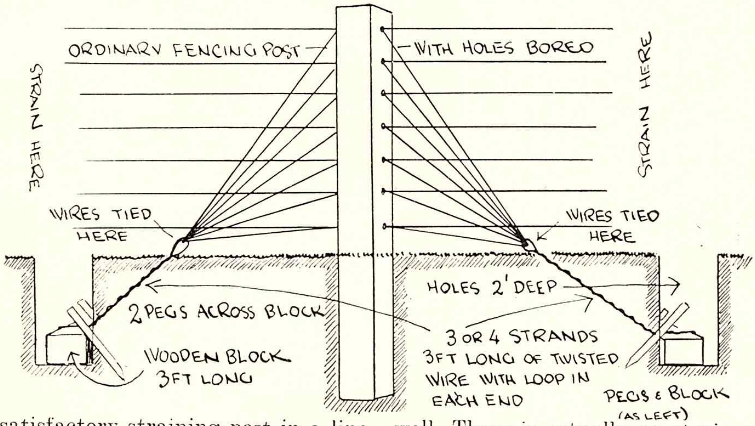


Needed, two round pieces of wood. First make a loop in wire A, then pass wire B through loop. Place one of the pieces of wood (first stick) across the loop and pass wire B over this stick. Then make another loop (second loop) at the bend of wire B. Now pass the second stick through second loop (as shown in figure 1). Then turn second stick in an anti-clockwise direction round first stick.



The wire B will be gradually drawn in through first loop and wound round first stick. When the wire is strained to the required tension take out the second stick and commence to unroll the wire wound round first stick back along wire B, and at the same time twist the loose end of wire B back along wire B.—J.I.I., Christchurch.

INTERMEDIATE STRAINER



A satisfactory straining post in a line of fencing can be made from an ordinary fencing post bored for the wires as illustrated. Use a stout post and foot it well. There is actually no strain on the post itself, and no necessity to use stays where it is not set on an angle to the fence line.—Fencer, Wairarapa.

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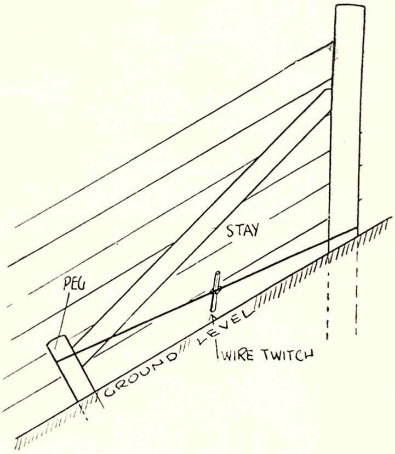
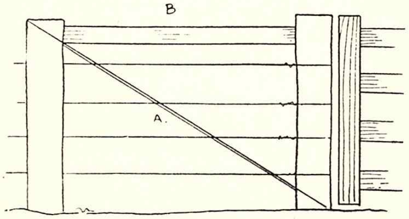
BRACED STAYS

When putting in a stay on the downhill side of an angle post, it is hard to fix effectively without putting in a long or tilted stay. This, however, can be overcome by driving in a heavy peg at the required distance, against which the stay is to butt. Then staple two wires around the post at ground level and carry to the top of the peg. Fit the stay, twitch the wires, and there is no fear of the stay ever loosening.—H.F.D., Tikokino.



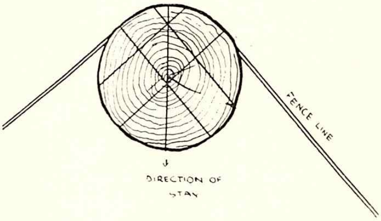
STAY SUBSTITUTE

A satisfactory straining post and stay can be made from light posts and a length of four by two scantling in the following manner. Let the four by two into the tops of each post and from the ground level of the gate post take a double thickness of No. 8 wire to the top of the stay post. Tighten the wire by twitching and it will be found that neither post can be moved by the tightest strain. The fence wires should go through the stay post (not stapled on the side) and anchored to the strainer (gate post) in the usual way.—“ Tom.,” Maraitotara.



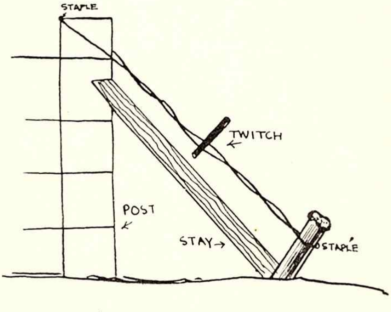
ANGLE-POST STAY

To find the correct angle for the stay on a corner post on a fence line draw four lines parallel with the two fence lines on top of the post, using a piece of 2 by 1 on a folded 3ft. rule. The lines should cross each other. Then draw a line bisecting the points where these lines cross. This is the correct line for the stay if it is to give the post maximum support.—S.J.B., Masterton.



COMBINED STAY TIE

Where a strainer situated in a fence line takes the strain from both sides, it is usual to have two stays. This can be avoided, and the post held rigid against either or both strains by using one stay and a twitch wire as illustrated. Where timber is scarce and expensive this will be found an economical and efficient stay.—W.M B S., Fairdown.



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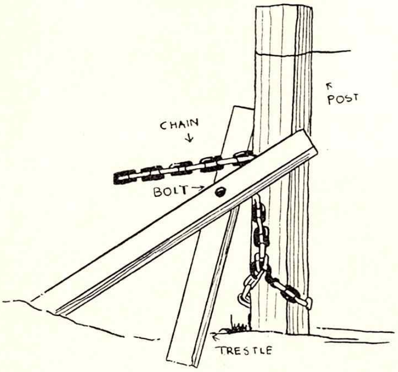
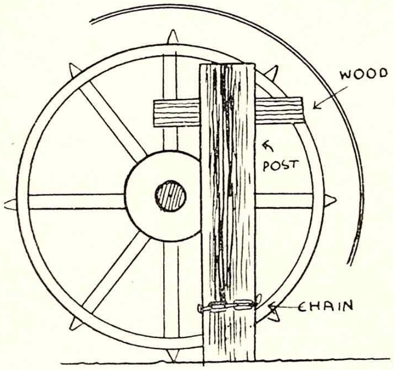
PULLING STUBBORN POSTS

Take two pieces of 4in. by 4in. timber about four feet long and bolt together as shown in the sketch. Brace at the bottom with a cross-piece. Hook a snigging chain round the bottom of the post and over the device and pull with horses or tractor This is an easy way to take out posts when removing an old fence.—B.R., Kawa Kawa.

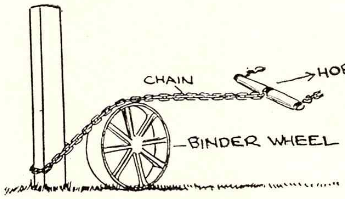


This method is unbeatable where a line of posts has to be pulled out. Drive the tractor alongside, put a chain round the bottom of the post and make fast to a gripper on the back of the wheel.



Put a piece of timber between the top of the post and the wheel to keep the fender out of danger, then move forward in low gear and out it comes.—Amos.

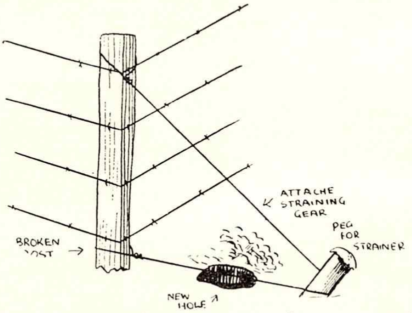
Even though an old fence post is set firmly in the ground, it is a simple matter to pull it out if a strong implement wheel, a stout chain and a horse are available. First fasten the chain securely round the post at a point about four inches above the ground.



The wheel is set up so that its tyre is close to the post. The chain is then run over the top of the wheel, and when the horse puts the strain on the post will pull it up easily.—"Tinwhistle," Nuhaka.

REPLACING ANGLE-POST

When an angle post is broken in a fence line, dig a hole at an angle about four feet from the post, and place another post in the hole. Run a wire from the broken angle post to the one in the hole Then dig your hole for the new angle post on the required line. Now attach your straining gear on to the wire and pull the fence back to the line. This not only saves cutting the wires and joining up again, but strains the whole fence up again.—R.H., Waipukurau.



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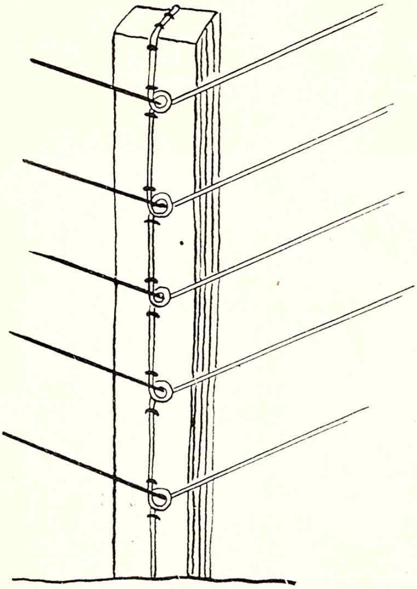
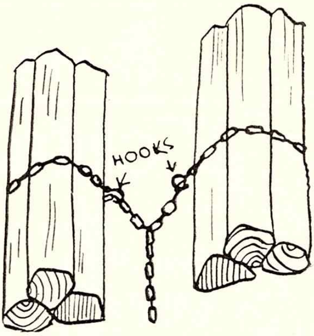
POSTS IN HOLLOWS

The following method of keeping the wires from flying off the posts when there is either a steep lift or a heavy pull down will be found very efficient.—Start from the top of the post and staple a piece of No. 8 wire across the top. Have the wire about 4ft. 6in. long. As the wire is run out, a turn is taken in it to form a loop and is pulled tight or hammered until the size of loop is a little larger than a staple. Then staple close up to both sides of the wire. Continue down the post until a loop is provided for each wire. The wires are run through the loops which take the place of staples.—A.A., Orere.



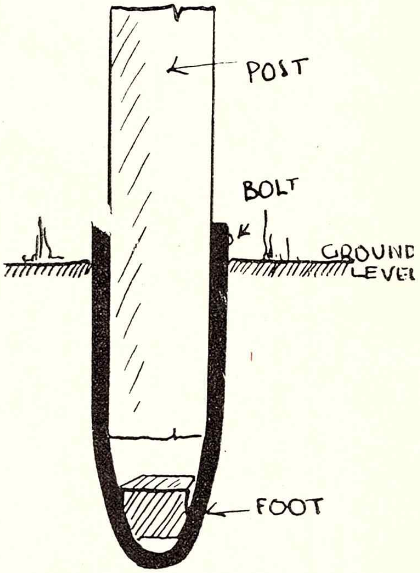
DRAGGING FENCING POSTS

To draw a load of six posts along a fence line, place the chain on the ground in the usual way, put three posts in a compact pile on it near the big link end; then, taking the hook end of chain, pass it over the posts, down through the big link and stretch it out along the ground ready to receive the remainder of load. Next, place in compact pile against the other three posts. Take the hook end of chain, pass it back over this pile, down between the two lots of posts, under the chain and out in front ready to hook on to the swingletree.—N.B., Ohingaiti.



USING SHORT POSTS

From time to time one finds a post too short for ordinary fencing. This difficulty can be overcome by attaching an old iron standard, bent as shown, when it can be used as a serviceable footed post. Take the iron standard and staple securely on one side of the post. Bend down to depth required. Place foot through loop and bend up, and staple on other side of post.—D.G.M., Frasertown.



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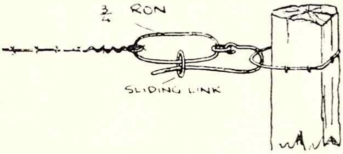
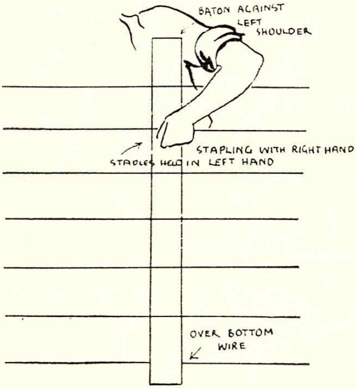
FENCE WIRE CATCH

It is frequently an advantage to have a short section of a fence so constructed that the wires can be quickly undone to allow farm implements or stock to go through. Where a gate is not warranted by frequent traffic, the wires can be attached as illustrated. They can be released or replaced in a moment, and the wires will always be tight.—H. McL., Hakataramea Valley.



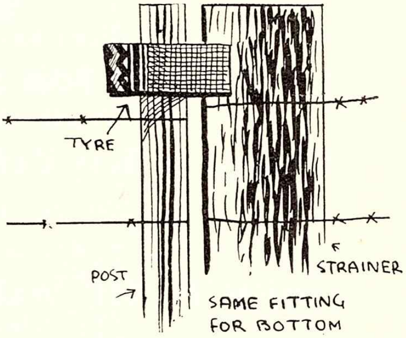
PUTTING ON BATTENS

By employing the following method one man can put on battens quickly and easily. Have your battens laid on the side of the fence from which you staple. Take a batten, reach over the top wire and insert the bottom end of the batten in between the two bottom wires. Draw the top up against the wires. Stand with the left side to the fence and reach over the top wire with the left arm, holding the batten in the crook of the arm. Have the staples in the left hand and drive home the first staple on the second top wire. Stand back to see that the batten is in the correct position. Now drive all the lower staples. Finally place the left foot on the bottom wire and press down to release the wire from behind the bottom and drive the remaining staples. Having tried various methods when on contract or day work, I have found this method the best.—T.P., Waipawa.



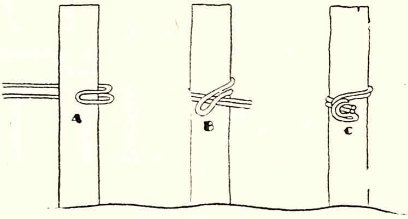
A NON-SLIP FASTENER

Instead of using wire loops to fasten the "Taranaki" gate, try two pieces of auto-tyre. These are more resistant to the weather, and more flexible. They should be spiked to the gate as shown.—Duffy, Nuhaka.



A "BOOLIGAL HITCH"

A "Booligal hitch" is the only method of fastening two rails together with wire that will be tight without breaking the wire. The illustrations show (a) the double wire perfectly straight bent round rails; (b) taking care to have the ends held at right angles to the loop insert a lever and twist the loops round the ends. Do not cut off the ends till the twitch is tight. (c) Hitch completed. This hitch was largely used by bullock drivers years ago in Australia.—W.M.A, Karitane.



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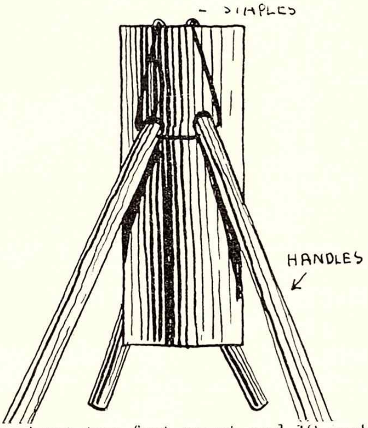
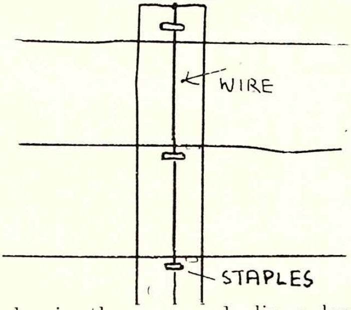
FENCING A SWAMP

Take a piece of timber which two men can comfortably lift: preferably a piece of maire or hardwood from 2ft. 6in. to 3ft. long. Now secure four arms 3ft. long and about 2in. thick, shaped at one end to fit holes which are bored in this block. Bore two holes on opposite sides, about a third of the distance from the top, and four inches apart Place them at such an angle that the ends of the arms, when fitted, are about two feet apart and 18 inches from the block. Then wire securely as shown in the diagram. This device is very effective when fencing through swampy ground or where it is too wet and soft to dig a post-hole.—G.C.B., Horopito.



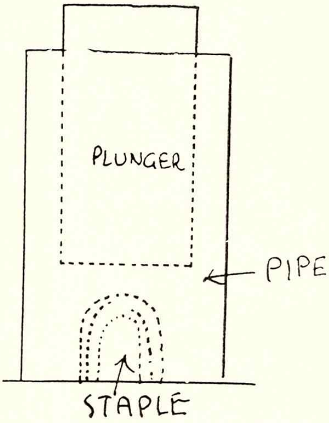
MOVABLE WIRES

Instead of pulling the staples out to let a horse through a fence, put staples in the post and slip a length of wire down to hold the wires in place as illustrated.—"Farmer." Clydebank.



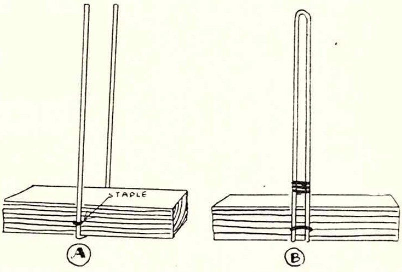
DRIVING STAPLES

When small staples are to be driven into hardwood this little tool will do the job without bending them It is made by flattening a short piece of seamless tubing to take a flat steel plunger with a sliding fit. The tool is set over the staple which has been started and the plunger is tapped with a hammer.—"Myrle," Canterbury



FOOTING A POST

There are many methods of footing a post, but I find the following to be the quickest. "A" shows the wrong way to attach the wire to the foot, with ends upwards. "B" shows the correct way, leaving a loop at the top as shown. As both wires come down at the back of the foot, the foot can easily be pushed home, with no wire to push it out into the post hole again. When the post is half rammed, put the rammer through the loop and lift. This takes up the slack and lifts the foot hard against the earth, so that when the fence is strained the post will not lift at all.



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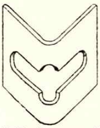
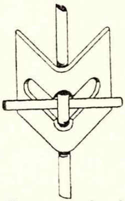
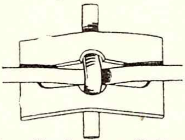
Galvanised Fence Clip



The "Fulcrum" Clip.



Slip clip over horizontal wire as shown, then pass the vertical wire between clip and wire.



The clip is then flattened out sufficiently to make a kink in each wire by blow of hammer against weight, and thereby makes a complete lock.

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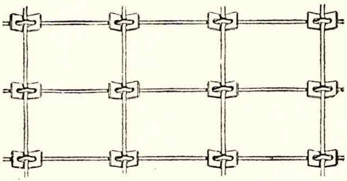

A section of fence showing "Fulcrum" Clips in use.

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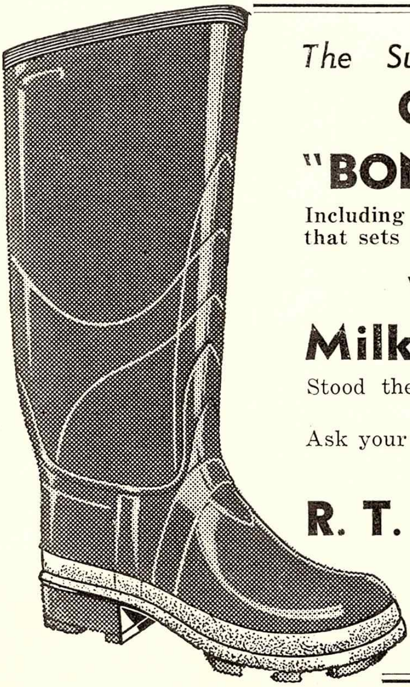

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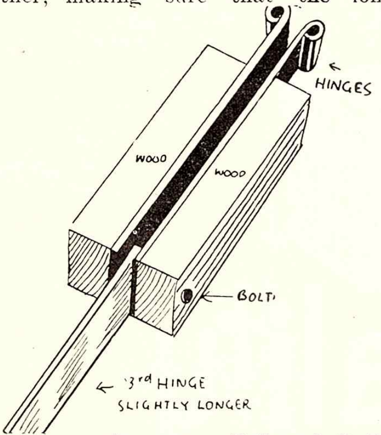
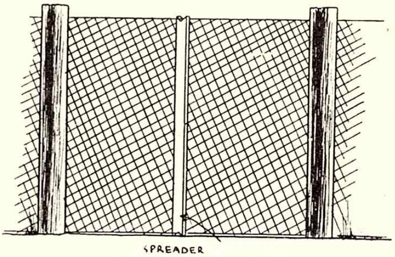
STAPLES FOR CONCRETE POSTS

To construct a simple machine for making long wire staples to go right through concrete posts, the following are required:—2 pieces of 3 by 2 timber 8in. in length, 3 old gate hinges, one being 6in. or so longer than the others for preference, a 7in. bolt, and two washers made out of No. 8 wire. To make, drill a hole through the ends of both blocks of wood, slightly higher than half way. Place the three hinges together, with a wire washer on each side of the centre one, and bolt all together, making sure that the long hinge is in the centre. Nail or bolt the staple machine on a bench. Place a piece of wire, ready cut, across the wood blocks, after lifting the centre hinge, and bear down on the end of the hinge. This makes a perfect bend in the wire. The side hinges need to be lower than the edge of the wood, as this eases the first part of the bend in the staple, and keeps it true before entering between the hinges. The wire washers leave just neat room for the staple to be squeezed through.—H.P., Feilding.



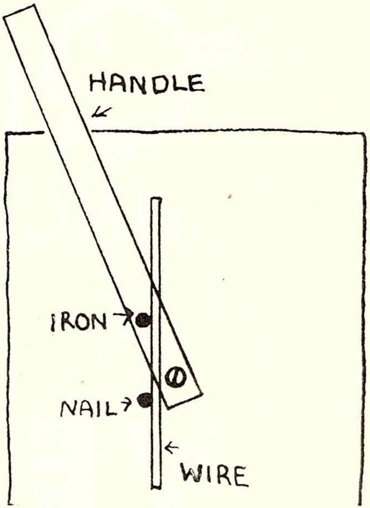
SPREADERS FOR NETTING

Spreaders for temporary wirenetting fences can quickly be made as illustrated. For 3ft. netting, make the spreaders 1in. x 1in., 3ft. 2in. long, of white pine for preference, and with a V in each end 1in. deep. Place the netting stakes about 4 yards apart, and put about 4 spreaders between the stakes. They tighten the netting both vertically and longitudinally, and put the netting right on to the ground, which is important, for lambs at docking time. These spreaders are light to handle and simple to fix or remove.—"Otoko," Gisborne.



ANOTHER STAPLE IDEA

Get a block of wood about 9in. by 12in. and 2in. thick. Drill two holes in a piece of iron 1in. by $\frac{1}{4}$in. and 15in. long, one (5-16in.) at the end and the other ($\frac{1}{4}$in.) 2in. further up. Rivet a piece of $\frac{1}{4}$in. iron 1in. high in the second hole. Screw the handle on with a 5-16in. coach screw, leaving 1in. protruding above. Drive half of a 4in. nail in the block 2in. from the coach screw, and then place the wire, as in the diagram, and pull the lever round. —"Farmhand," Havelock North.



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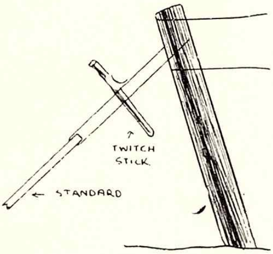
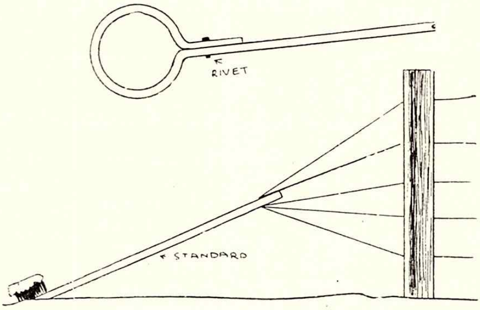




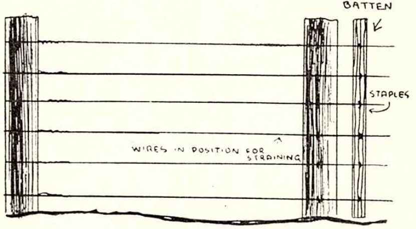
To make a strong and lasting anchor to be used either in tying back an angle post, or in conjunction with a bored post, where used instead of a strainer in a wire fence. Take an old iron standard and bend one end round into a loop about five or six inches in diameter and rivet together. Make a large hole in the other end big enough to take the number of wires to be used. Next take an anchor block 3ft. to 3ft. 6in. in length and pass this through the loop. This anchor will never let the fence down.—T.P., Waipawa

ATTACHING NETTING

The following has proved a great labour and staple saver on the farm during the putting up of turnip breaks in the winter months. Drive two staples at the top end of each stake about a quarter of an inch apart, and one staple at the bottom Then put the top wire of netting between the two top staples and the bottom wire of the netting below the bottom staple. Take a length of odd wire, a little longer than the netting, and turn one end over like a hook. Run this down through the staples on the outside of the netting.—M.M.

WIRE SPACER

A wire spacer for post and dropper fences is made and used as follows:—Staple all the wires, before straining, in their proper positions on a dropper, which is moved by an assistant past each post in turn. Staple up as shown.



This eliminates guesswork in spacing the wires. Barbed wires will not slide through the staples so leave a space on your spacer.—H.N.I.H., Takaka.

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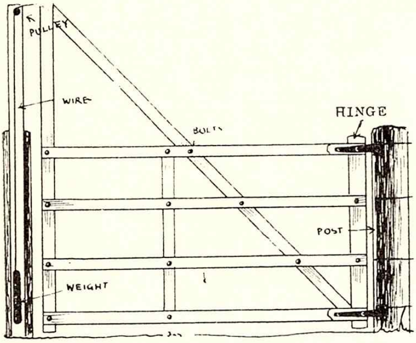
CHAPTER IX.

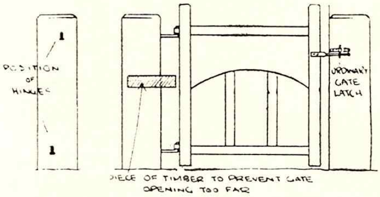
ALL ABOUT GATES

SELF-CLOSING GATES

A cheap and easily-constructed gate to replace Taranaki gates is shown in the sketch. It is made entirely of 4in. by 1in. timber and ⅜in. by 3½in. coach bolts. The rails are placed on each side of the stiles and bolted at each intersection. The brace runs inside the rails and is also bolted at each intersection and may run high to connect with the long stile to suit an automatic weight-closing device high enough to allow cattle to pass under the wire to which the weight is attached. A gate like this can be made by a farm hand, with a saw, brace and bit and a spanner, and will stand more rough usage than a mortise and tennon-joint job.—G.C.B.H., Westport.



Here is an inexpensive and lasting method of erecting a self-closing gate. Hang the gate about 2in. out of plumb, as shown. The gate will then close immediately and fasten. Nail a short piece of 4 x 1 across the post to prevent the gate from opening more than 45 degrees.—A.S., Te Awamutu.

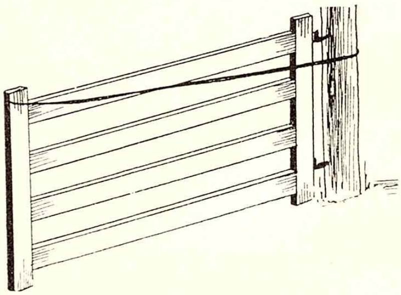


REMOVING RUSTED NUTS

It is often the case that bolts from gates, etc., are discarded (after the wooden part has decayed) because the nuts are so firmly rusted on that a spanner will not move them. If nut and bolt are heated to a dull red and plunged into cold water, it will then be found in most cases an easy matter to unscrew the nut.—J.E.D., Palmerston North.

GATE SNUBBER

A gate can very easily do considerable damage to itself in high winds if allowed to blow back to the fence. This strains the gate and hinges, and the usual method of driving in a stake to prevent this is both unsightly and dangerous to stock. This can easily be dealt with by stapling one end of a piece of No. 8 wire to the post and the other to the outside end of the gate. The wire acts as a snubber, easing up the gate gently as it opens. It can also be adjusted to stop the gate wherever desired.—F.R.L.H., Awaiti.



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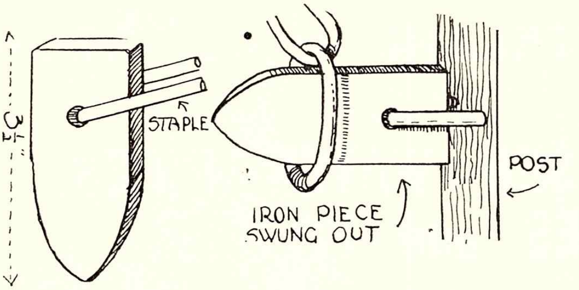
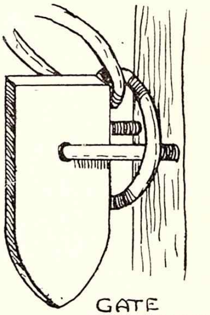


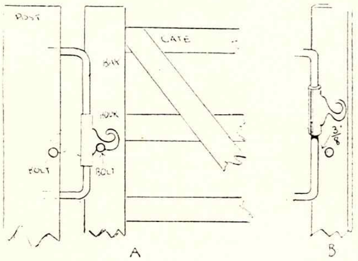


A SECURE GATE LATCH

The latch illustrated will be found to be easily operated and yet secure against stock. Take a piece of round iron about ⅜in. thick and 8in. long and bend 3½in. of its length at right angles to the other length. Now procure a piece of soft iron ½in. by ¾in. and about 3½in. long and hammer to a wedge shape at one end. At the opposite end bore a ⅜in. hole 1¼in. from the end. Through this put the long end of the right angled ⅜in. rod. Then bend the rod to the shape of a staple and drive into the gate post. A chain is attached to the gate, the piece of iron in the staple is swung outwards and a link of the chain slipped on and the gate is fastened as the piece drops down.—F.H., Kai Iwi.

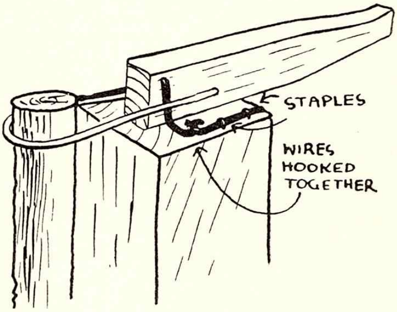
IMPROVED GATE CATCH

This is a very handy, quickly-opened gate catch. All that is needed is two bolts and a hook and bar from an old dray shaft. The latter are hammered into the post, as well as one of the bolts. The other bolt is hammered into the gate. It is necessary to be sure that the bolt on the gate is ⅜in. from the bar. Also make sure that the edge of the gate touches the bar. To open the gate the hook is raised, turned round and dropped with the back resting on the other bolt.—D.M.C., Waihopai Downs.



GATE FASTENER

I have not seen a Taranaki gate fastener to equal this one, which I have used with great success. All that is needed is about 5ft. or 6ft. of No. 8 wire and a piece of 1in. by 2in. about 14in. long, rounded to a handle at one end. Holes are bored to take the wire in the position shown in the diagram. The fastening holds itself down, but in case stock should learn to lift it, a hook holding the handle down to the wire fence may be used.—H.C.F., Ashhurst.



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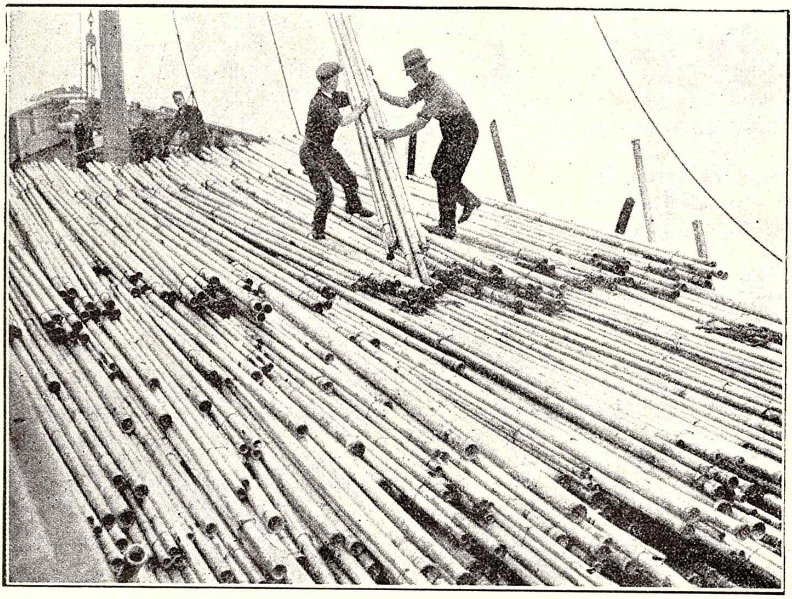

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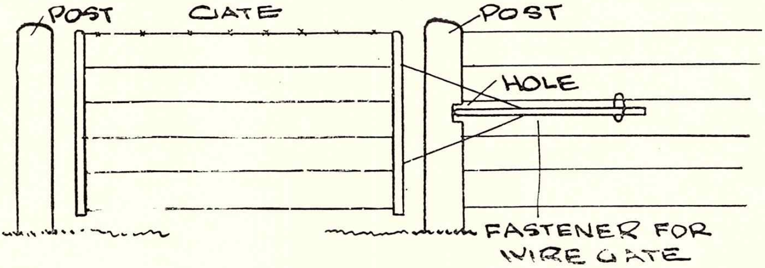
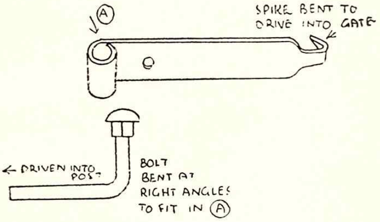
FASTENER FOR WIRE GATE



The illustration shows an efficient fastener for a wire gate. The end of the stick fits into a hole in the post, and when pulled back to the fence will tighten the gate and hold it secure.—"Tried," Oamaru.

CHEAP, LIGHT HINGES

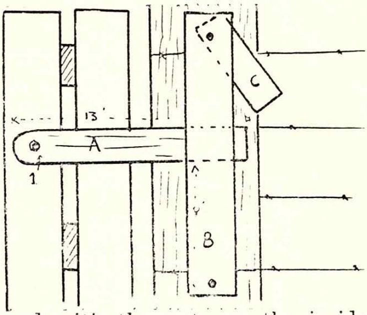
For each gate you will require two old, flat files of suitable size, and two small bolts. The pointed ends of the files are bent at right-angles, after heating in a forge. Heat the other ends very hot and hammer on an anvil, bending the ends round until they fit loosely round the bolts. Drill one small hole ¼in or less in the file, 3 inches from the rounded end. Nail on the gate as usual. Bend the bolts at right-angles and drive them in holes bored in the gatepost.—N.H., Takaka.


A
SPIKE BENT TO DRIVE INTO GATE
← DRIVEN INTO POST
BOLT BENT AT RIGHT ANGLES TO FIT IN A

A very serviceable gate hinge can be made from two handles off coils of barbed wire. Take two wire handles off the wooden drum and get a piece of ½-inch or smaller pipe. Straighten one end of each handle and thread through pipe. Then bend the wires back into position again and staple on to the post and gate. This hinge will last for years.—"Interested Reader," Westport.

STOCK-PROOF CATCH

Often horses or cattle get the habit of opening a gate or door. A latch which will prevent their doing this is shown in the drawing. This latch requires four bolts ¼in. by 2½in., and four pieces of board ½in. by 2½in., in lengths of 6in., 15in., and 17in., as shown. The bar "A" hinges on the bolt numbered one, and is fastened to the closed position at "A." The block "C" hinged on the bolt slides under the piece "B," when it is desired to lock the door. The fourth block is held in position under the piece "B" by two bolts, which also hold the lock securely to the gate-post. All the bolts should be placed with the nuts on the inside.—G.C.B.H., Westport.



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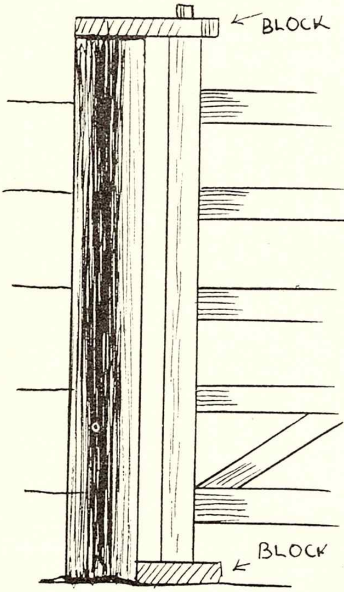
BLOCK HINGES

The idea shown is very useful in bush country, being strong and economical. The bottom block should be set first and sunk flush with the ground and securely pegged. Totara is the best wood to use. For the top block a piece of tough durable wood, such as puriri, hinau or birch is necessary. After setting the bottom block swing the gate by adjusting the top block to suit. Wire and staples will fix it, but three or four six-inch spikes are best. Make the blocks big—2ft. 9in. x 3in., with about a 3in. hole.—"Bushie," Frasertown.

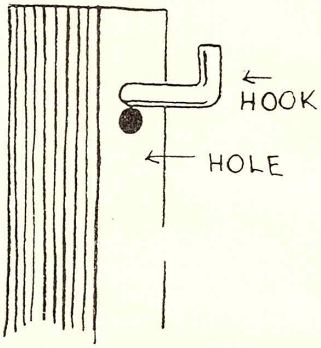


GATE SPRING

Cut the spring of a disused rabbit trap, so that both ends are of equal length, and attach this horizontally to the gatepost and upright with screws. When the gate is opened the spring is forced down. The gate is thus shut when the hand is removed.—"Farmer."

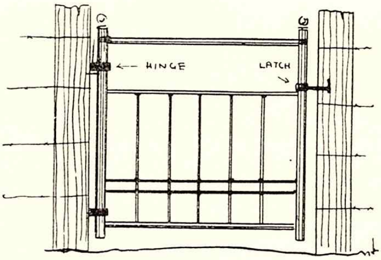
REMOVING RUSTED HINGES

Frequently, as a result of rusting, it is found difficult to remove that part of the gate hinge which is screwed into or through the post. To effect this without splitting the post or damaging the gudgeon, when both will be again required, bore an auger hole directly under, and as close as possible to the shaft of the gudgeon. A smart tap downward toward this auger hole will now loosen the gudgeon and enable its removal.



AN IRON GATE

We had an old iron bedstead long past usefulness which had been stowed away in a shed for some years. As we needed a gate for the paddock I hit upon the idea of utilising the end of the old bedstead. A coat of green enamel made a big difference to its appearance, and with loops made of strap iron for hinges it answered the purpose admirably. An ordinary latch was fitted, and the job was completed.
—A.E.L., South Perth, West Australia.



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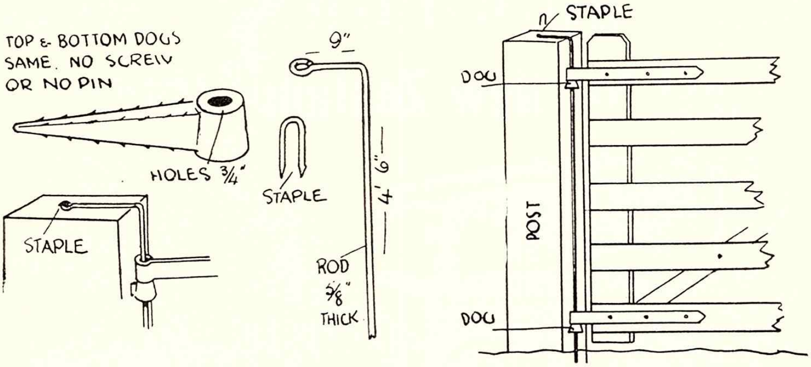
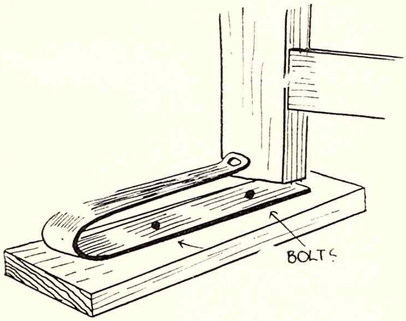
STRONG GATE HINGE



A type of gate hinge which has the advantage that it cannot be lifted off its hinges, and so opened by horned cattle, and which is cheap and easy to fix, is made as follows:—Use the ordinary dogs, but without screw or pin for both top and bottom hinges. The halves of the hinges which bolt to the gate rest on top of these and a $\frac{5}{8}$in. diameter iron rod 5ft. 3in. long, is threaded down through all the hinge loops. Nine inches from its top, this rod is bent at right angles, and this short length is stapled firmly to the top of the post as illustrated.—M.P.S., Wairoa.

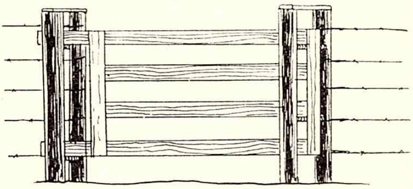
HOLDING GATE OPEN

An effective and easily-operating gate-stop can be made from an old rabbit trap. First remove the jaws, plate and cross-piece of the trap, then drill two holes in the bottom-piece. Bolt the trap firmly on to a block of wood fixed in the ground in front of the gate in the opened position. Place it high enough to catch the bottom of the gate by about half an inch. To release, press the spring down with your foot and pull the gate inward. Instead of the two bolts, iron staples will hold the trap in place on the block.—C.C., Southland.



SIMPLE FARM GATE

The material for the construction of this very satisfactory farm gate depends largely upon the purpose for which it is made. For an ordinary paddock gate make it out of seasoned board, 1in. x 6in., and 12ft. or 14ft. long. The posts supporting the gate are about 5in. apart, the one on the inside being about 8in. ahead of the other. They are joined together by cleats or rollers which support the gate and allow it to be pushed back and swung open. If rollers are not obtainable, cleats made of any hard wood are satisfactory. If the gate is to be used in pig pens the lower cleats on both sets of posts should be placed just above the lower board to prevent the pigs from lifting it up.—W.J.H., Arapae.



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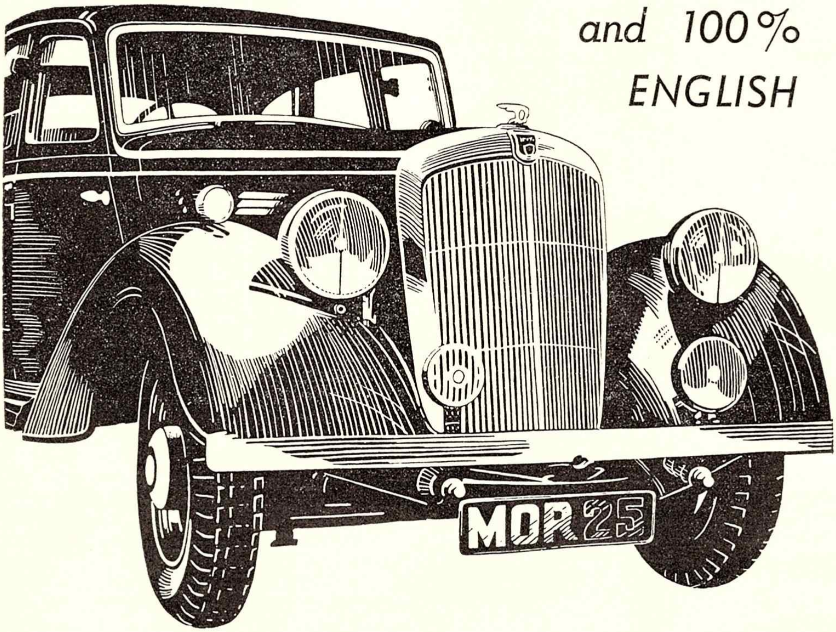

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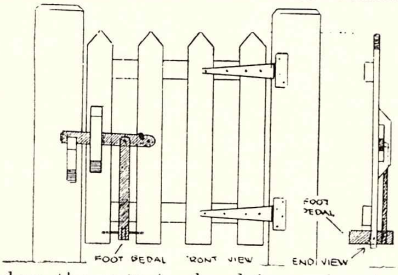
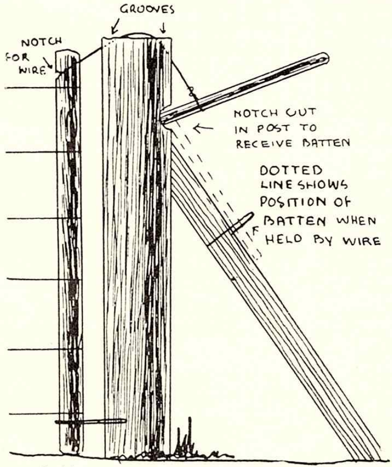
FOOT GATE CATCH

When carrying a bucket of milk in each hand it is very inconvenient to have to put one down to open a gate or door to pass through. If the ordinary lever latch which locks automatically when the gate is closed is employed, a pedal operated from the opposite side of the gate from which the gate swings open simply pushes the lever up when pressure is applied with the foot. This, at the same time, opens the gate.—J.R.C., Blenheim.



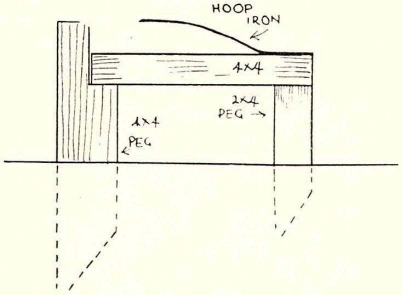
WIRE GATE TIGHTENER

The best lever for tightening and holding closed a wire gate, is one fitted as shown in the sketch. Bore or cut a notch for the lever at the back of the gate post. From about one-third up the lever, a wire passes over the top of the post in a groove cut to receive it and is bound to the top of the gate. A wire hook connects to the post or its stay and holds the lever securely in closed position.—"Constant Reader," Levin.


GROOVES
NOTCH FOR WIRE
NOTCH CUT IN POST TO RECEIVE BATTEN
DOTTED LINE SHOWS POSITION OF BATTEN WHEN HELD BY WIRE

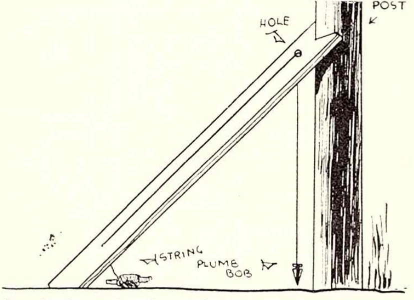
GATE STOP

Take a piece of board, 4in. by 4in. and approximately 16in. long. Point it and cut a piece 2in. by 4in. out of the top, as illustrated. Next, take two pieces of board, 4in. by 2in., 15in. and 12in. long. Point the shorter piece and on to the other secure with screws or nails a piece of hoop iron just long enough to leave enough room to hold the end upright of the gate. Drive the pegs into the ground to the required depth and the gate-stop will be ready for use. To release the gate, press the hoop iron with toe.—"Rastas," Dunrobin.



PLUMBING POSTS

To make a simple instrument for plumbing posts, such as gate-posts, which must be upright for the gate to swing true, a V-shaped notch is cut out at the end of a board, and a hole is drilled about six inches below the notch. With the line or string through the hole, the board is set up against the post at any convenient angle. The line will then hang in a true vertical position close to the post so that one can readily see whether they are parallel or not. This method is very helpful when putting in fairly long posts or poles.—"Duffy," Nuhaka.



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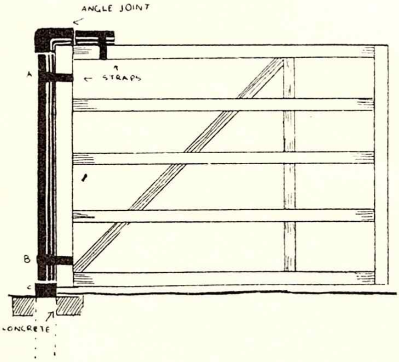
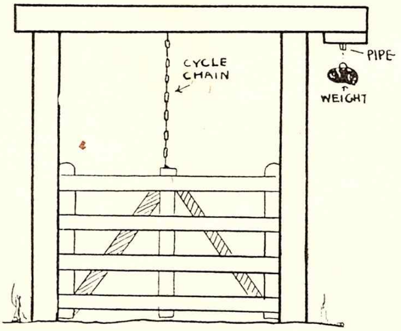
HANGING A SMALL GATE

The following method of hanging a small gate is most useful, as it does away with post and hinges, saves time and looks neat. Take a length of old 2in. pipe about 7ft. long, and cut through so that one piece is as long as the height of gate. Thread at both ends and also one end of the remaining piece, and drive the latter piece into the ground at the point from which the gate is to hinge, leaving the threaded end clear about 6in., as in diagram. When driving place a piece of wood over the end of the pipe to take the blow. This will save burring the thread. To set this piece in cement will make a better job, with less length of pipe needed. Next, a good joint screwed well on and then the other length screwed into the socket, oiling beforehand to ensure turning easily. Then fit on tightly an elbow and short piece of piping at the top, to which the top of the gate is strapped so as to turn the pipe as the gate opens or shuts. A hole bored through, and a long bolt will serve just as well. Two other straps, or bolts, one at the top and the other near the bottom, to fix the gate to the pipe, will finish the job. If time is taken to bore holes through the pipe it will do away with the top strap, as described in diagram, as bolting the gate will turn the pipe, and suspend the gate at same time.—T.D.R., Motueka



AN EASILY-WORKED GATE

Here is an idea which makes all lift-up-and-down gates a pleasure to work. Ordinary chains do not run well and ropes break. Odd lengths of bicycle chain may be procured cheaply and joined together. Procure also two small sprockets and fit them in the usual places on the top cross-bar. In order to stop the chain from coming off the outside sprocket, run the chain through a three inch length of three-quarter inch pipe. Screw one end of the pipe and put a back nut on. Procure a short length of three inch by two inch and bore a hole in the centre to take the pipe. (The back-nut on top stops it from falling through.) Then nail the three inch by two inch underneath the outside sprocket. The chain is strong enough to carry the heaviest gates and if balanced well runs remarkably well.—J.O.H.T., Hakataramea



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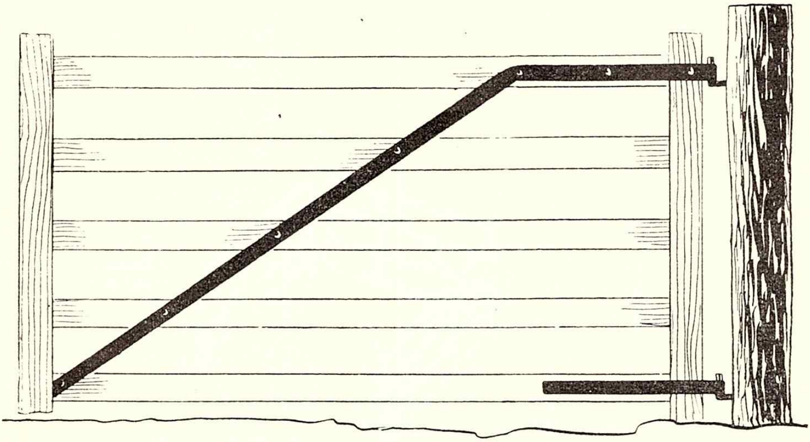
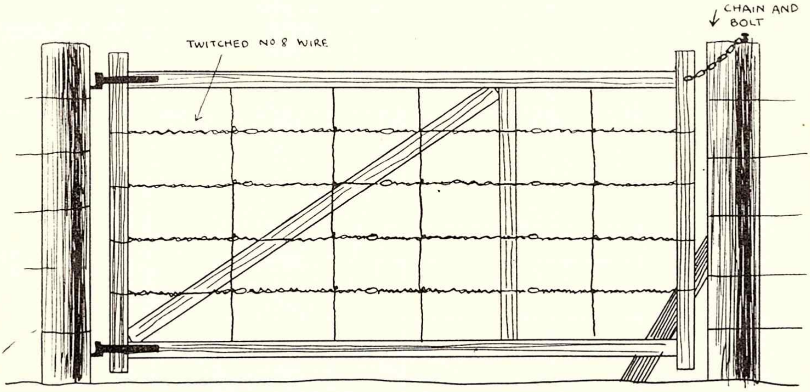
HINGE-STAY COMBINATION



An old cart tyre makes an excellent stay and hinge combination for a wide, heavy gate. The "hinge" is continued to the bottom bar of the gate and is bolted to each bar. This gate will never sag.—"Hayseed," Gore.

LIGHT, STRONG FARM GATE



The accompanying illustration shows a farm gate which is very good for a windy position. Two bars are mortised in to the uprights with a 1¼in. auger. The small upright and stay are fitted, only three nails being used. No. 8 wires are then doubled round the 3in. by 2in. upright on the latch end, brought round the hinge end and stapled with D.P. batten staples. Twitch the wires up, and run two or three light, upright wires, turning these round the cross wires at the correct gauge. Made of split rimu with the bars tapered, and all ends soaked in creosote or tar, these gates should last for a long time. They are very light and have so little wind resistence that the ground does not blow away from beneath them. If the stay is fitted as shown in the diagram, it will keep dry and last longer. I have also shown a stop where one can crib a little extra width to the gateway. These gates can be made of either sawn or round timber.—M.R.H., Te Tiki.

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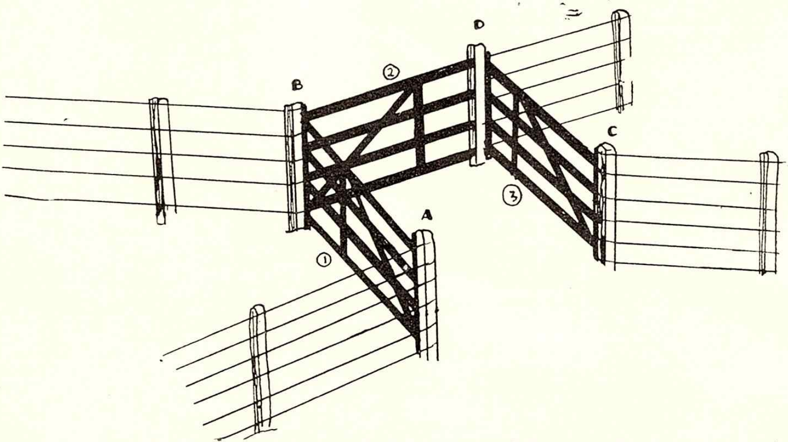
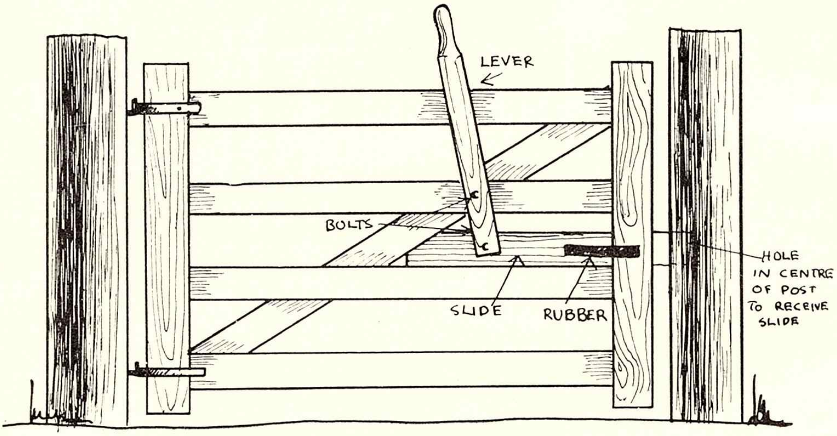
FOUR-WAY PADDOCK GATES

The arrangement of gates illustrated in the accompanying diagram is very handy when one wants gates to give access to four paddocks. They are easily erected. Dig the post holes big enough so that one can shift the posts to the exact position before ramming and staying. With this arrangement one can shift stock direct from any one paddock to any other of the four. Have the other gates shut. When erecting it is desirable to have a stick of the same length as your gates, this being much easier to handle than a gate. Always allow at least 4in. for gate hooks and hinge. It is quite a simple thing to erect, but one must be careful in one's measurements before raming and staying one's posts.—W.E.G., Marton.



SAFETY GATE BAR



To make this effective gate catch, all one needs is a lever about 2ft. long and two 3in. bolts. Attach to the gate slide as shown in the diagram. A short piece of rubber motor tube makes it automatic in closing. It has the advantage that it can easily be opened by anyone on horseback.—"Mori," Ruatiti.

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CHAPTER X.

ALL KIND OF HINTS

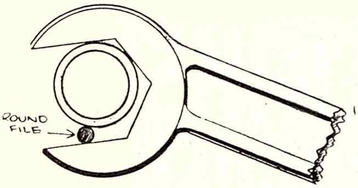
TO SHARPEN DULL FILES

When a file does not cut as well as when new it does not necessarily mean that it is worn out. To improve its cutting capacity all that is required is a little sulphuric acid solution and some ammonia. Dip the file into the acid for a few minutes, then remove it and wash it off with ammonia. The acid eats the steel filings which clog the teeth and causes dullness. The ammonia neutralises the acid and prevents it eating into the file itself after the filings have been cleaned out.—P P. N H. Westport.

HOME-MADE BITS

If ever short of bits for boring wood the following will be found handy. Take a piece of ½in. iron rod, about 8in. long, and square one end with a file to fit in the brace. The other end is put on a solid piece of iron and flattened out. Take a file and taper this to a point, and sharpen the sides so that they will cut to the right.—R.M., Waitotara.

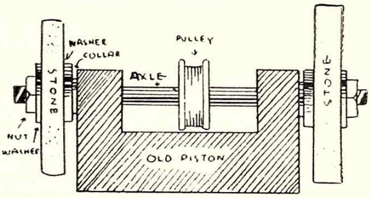
SUBSTITUTE PIPE WRENCH



A substitute pipe wrench can be made as shown with an ordinary wrench and a round file placed between the jaws.—R.I.A., Sydney, N.S.W.

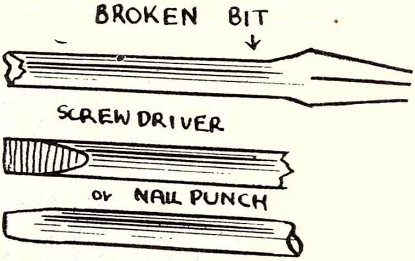
CHEAP EMERY STAND

Get an old piston out of a tractor engine—a fair-sized one for preference. Remove the rings, and cut and trim as shown. The man who owns a lathe can turn up a spindle and collars to fit same, and thread both ends of the spindle. When this is done, place a pulley on the spindle in the centre of the stand. Bore holes in the bottom of the upturned piston to bolt the stand down firmly.—B.M.M., Timaru.



HOME-MADE PUNCHES

Good nail punches can be made from old gimlet bits which have been broken. These are good for removing old rivets from scythe blades and similar jobs. By flattening the points after heating, these will also make excellent screwdriver bits.—N.I.H. Takaka.



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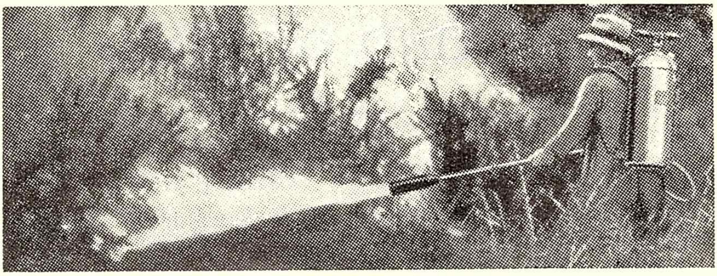

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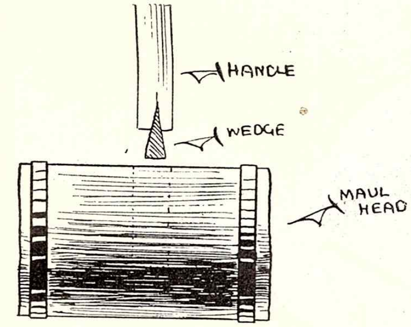
FITTING MAUL HANDLES

Most farmers have trouble with their maul handles. By adopting the method of wedging them shown in the accompanying illustration the handle will never come out of its own accord. The only way to remove the handle is to cut it off short and then bore out with an auger. It is therefore advisable that only wooden wedges be used. The maul end of the handle is split and a V-shaped wedge is inserted: the handle is then put into the maul and hammered home The moment the end of the wedge touches the bottom of the hole, it is driven into the handle and spreads the end, thus making a good, tight fit. A hundred and one different ways in which this idea can be used will immediately present themselves to any farmer. For pegging the cross-bars to the runners of a sledge I use two wedges: one on the bottom and one on the top. This makes a far stronger job than nails or bolts and at the same time costs nothing. It can also be used when building stock yards, etc.—"Baldy," Wanganui River

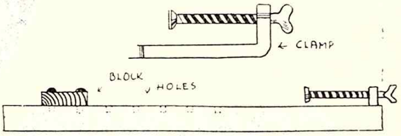


MAKING A MAUL

A good maul is a great asset, but a bad one is a nuisance in more ways than one. Ake-ake or Manuka make the best mauls, with ake-ake an easy first. The timber should be seasoned for 12 months, either buried, or under a building. If the latter place is chosen, the cut ends should be greased to stop cracking. In spite of all arguments to the contrary, straight rings are better than bevelled. Pare your maul down to the size of the outside of the ring straight through. Then mark the inside of the ring on each end, keeping the rings separate, and pare down from the centre outwards to procure a driving fit. In case the rings are not round, mark the end of the block and the ring, and keep the marks together while fitting. The maul should not be more than 13in. in length, and the wood should not project more than one-eighth of an inch through the ring, which can be burred over with a heavy hammer or axe-head. Bore the hole for the handle last, dead centre between rings, 1¼ inches.—Bushie, Frasertown.

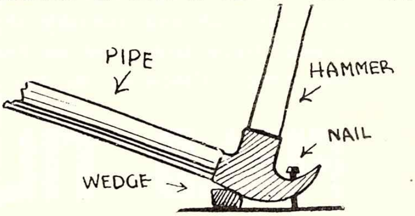
CRAMP FROM WRINGER

A cramp for woodwork can be easily made by detaching the screw from a discarded wringer. Make a slot in the top of a piece of 3 x 2. Fit the screw and bolt in at the end; next bore holes about two inches apart all along to take the stop block as in the sketch.—J.L.C., Christchurch.



LEVER FOR HAMMER

A pipe lever fitted on the hammer-head saves the handle from cracking when drawing rusty nails. Slip a small length of pipe over the head of the hammer so that it can be used as a lever. After a wedge is placed under the lever both hands are used; one on the lever and the other on the handle. I find this a very good way to pull large, rusty nails or spikes.—C. S., Nuhaka.



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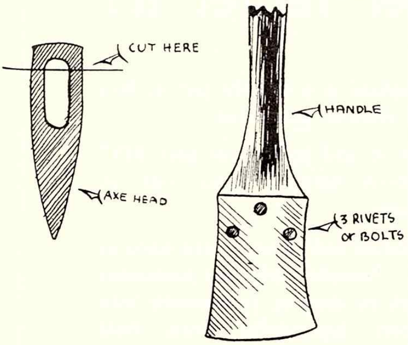
USEFUL CUTTING TOOL

Cut the back from an old axehead, leaving the eye open. It can then be easily bored and a suitable handle (preferably hardwood), fitted as shown.



This makes a useful tool for cutting strings in logs when splitting, or for cutting through papa, hard clay, etc., when fencing.—"Cocky," Napier.

SHARPENING SAWS

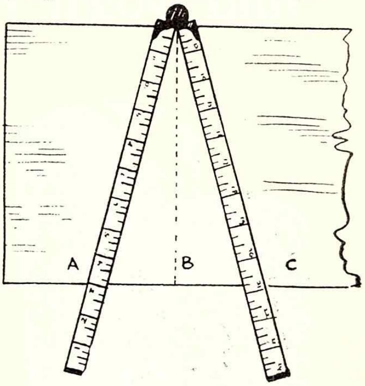
When setting the teeth of a saw, give a fraction more set than is required. Then sharpen as usual. After this has been done, lay the saw down flat on a board or piece of scantling, and with a firm pressure run an oil stone right down the edge of the teeth from the handle to the end. This, done on both sides, makes any uneven setting true and stops the ragged and jumping effect when cutting. If you have no setting tool handy, take a piece of old, flat steel, about one inch wide by one-eighth of an inch thick. With a hacksaw cut a slot in this about a quarter of an inch deep, and about two widths of the hacksaw blade. After a little practice one can set any saw any gauge with this tool with ease.—T.W.K., Petone.

CHISEL FROM OLD FILE

When files get worn out they are usually thrown away but a first-class wood chisel can be made out of them. All that is necessary is to grind one side of the end and then sharpen off with an oil stone. A handle will make it like a new chisel.—"Good Advice," Canterbury.

SQUARING BOARDS

The enclosed sketch shows a method of squaring a board when a square is not handy. First place three marks on the edge of the board at equal distances apart (A, B and C). Now take the rule and place, as in the sketch, from marks A and C. Place your pencil in the angle of the rule and mark; now draw a line from this mark to B. This line will be exactly at right angles to the edge of the board.—S.J.H., Westport.



RUSTY TOOLS

A rusted tool is permanently impaired, for, although it can be salvaged, it is more liable to rust again than one which has been kept in condition. To remove rust from a steel object, fasten it tightly with wire to a piece of zinc and place them in a container holding water, to which a little sulphuric acid has been added. It is a good plan to use a large container, so as to treat several objects at once, and they should remain there until the rust has entirely disappeared, which may take a week. When articles are badly rusted, add more sulphuric acid occasionally. The steel being in contact with the zinc, short-circuited battery cells are formed, and the rust is reduced to iron again by electro-chemical action. The steel becomes darkened or blackened by the process, but resumes its original colour when rubbed with sweet oil or a mixture of petrolatum and kerosene.—Michael, N.S.W.

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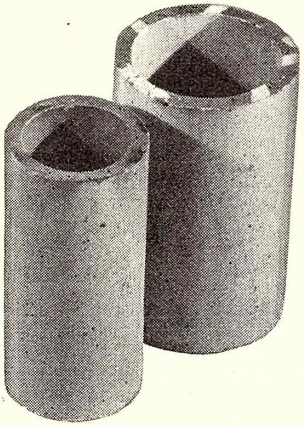

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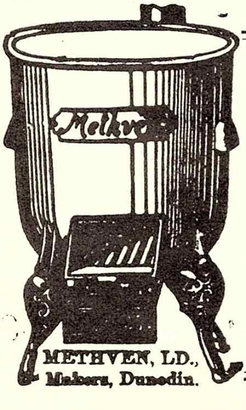

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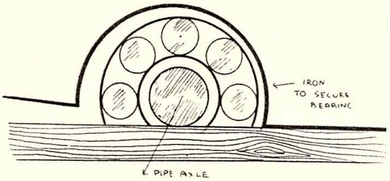
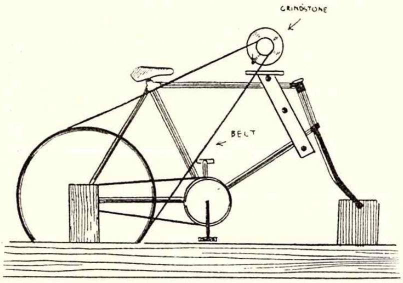
MOUNTING A GRINDSTONE

When setting up a grindstone lead in a piece of 1in. galvanised pipe the desired length, then procure two used roller-bearings from a car, also with a 1in. centre. Next mark on the side boards where the bearings are to rest and let them in to a depth of 1in.; that will leave the shaft clear to revolve. When fitting bearings file the shaft slightly and hammer home with a drift, drop in slots and make secure by covering with a metal strap. The fitting of bearings of this sort makes the stone very easy to turn.—G L.C., Nelson



BICYCLE-DRIVEN GRINDER

Belted to the rear wheel, a grinder mounted on the frame of an old bicycle can be turned at high speed. The front wheel is removed, and the frame is fastened on its base as shown, using one support for the fork and one each side of the rear wheel The grinding wheel is mounted on a table which is clamped to the frame. The same idea may be applied to the driving of other small rotary tools. The man just sits on the seat and peddles as though he were riding.—C.S., Nuhaka

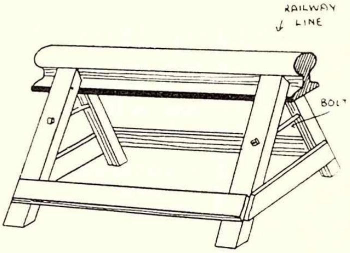


GRINDSTONE SPINDLE

Here are two methods of securing a loose grindstone spindle. (1) Drive one end of the spindle into the ground to such a depth that when the stone is laid over the top it comes to the right distance (usually the middle of the spindle.) Care must also be taken that the spindle is in the centre of the hole in the stone; but if the stone is an old one and a bit oval, then by placing the stone accordingly on the spindle, this may be slightly overcome. The spindle must be absolutely vertical. Now take sufficient flowers of sulphur, melt it and run it in round the spindle. This will set hard. About a quarter of the quantity of sulphur may be replaced by fine, clean river sand. but it is not really necessary. If no sulphur is at hand, then use lead in the same way. A blow-lamp will quickly remove a crooked spindle put in in this way.—Foot-rot, Takaka.

HOME-MADE ANVIL

A home-made anvil can be constructed from a 4ft. piece of railing iron mounted on a tressle as shown in the sketch. This will stand a lot of heavy pounding and comes in handy in many ways on the farm.—W.J.H.



IMPROVISED HACK SAW

Take a small file or a sharp cold chisel and cut teeth in the blade of an old scythe. Keep the teeth sloped toward the point of the blade, and you will find that this will cut as well as a hack saw.—R.M., Waitotara

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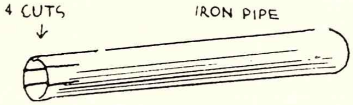
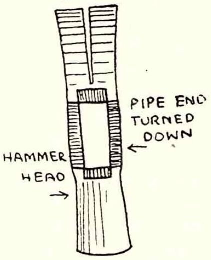
PIPES FOR HANDLES

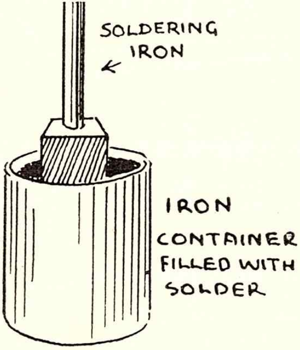
A strong handle for the hammer, mallet or even the maul, can be made from a length of galvanised pipe. When fitting to the hammer, first cut the pipe with a hacksaw as shown in the diagram. Then hammer this down until it is flat enough to enter the hammer head, when it should be driven firmly home. The sawn ends of the pipe will then project beyond the hammer head and should be turned back and hammered flat. A handle made in this way is practically everlasting.—" Cocky," Wanganui River.





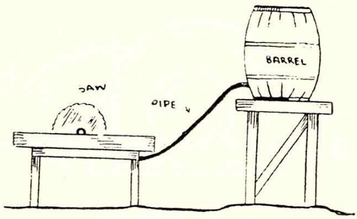
SOLDERING IRON TIP

A small iron pot one quarter filled with melted solder is a most useful receptacle for the iron, both when soldering and to keep the iron well tinned when not in use. Cut a hole or recess in the bench to take the bottom of the pot and stand the iron upright in the latter.—" Pakeha," Takaka.



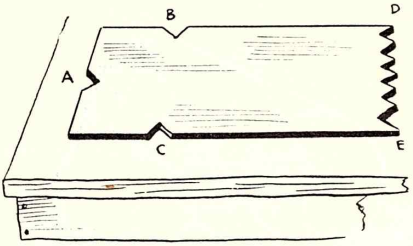
COOLING CIRCULAR SAW

A cheap and inexpensive device for running a stream of water on to a circular saw, to keep it cool when cutting timber, can be arranged as follows: —Fix a barrel on a stand not lower than the saw and from a hole near the bottom take a small pipe. Then connect an old spray nozzle with a piece of hose to fit the pipe and the job is complete. The nozzle can be regulated to secure the stream of water required. About 20 gallons in the barrel will last for a day's sawing. I have been using this outfit for two years with success.—W.A.L., Havelock.



STOP FOR PLANING BENCH

A piece of an old pit-saw or crosscut saw cut to 10in. by 4in. (shorter if a thin saw is used) makes an ideal stop for holding wood being planed on a bench. File slots at A, B and C to fit small bolts. Between D and E file small fine teeth. Bolt to the planing bench, using round headed bolts, as they are less likely to be hit with the plane. The end DE can be raised or lowered to hold any board in nearly any position by gently bumping the timber against the teeth.—J.G.H., Kai Iwi.



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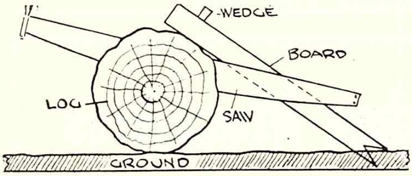
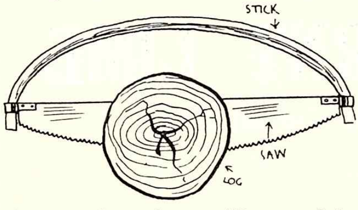
SINGLE-HANDED CROSSCUT SAWING

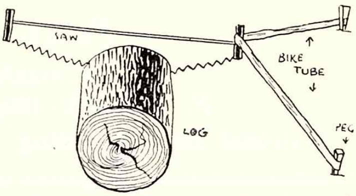
I have been using a device for single-handed hillside sawing for some time with every success. You take a board about 5ft. long, 6in. wide and half an inch thick. Cut a V-shaped piece out of one end to give it a hold in the ground. Where you are going to cut your log, tap a wedge in on the low side of the saw. Your board lies against the wedge and cannot possibly slip. The board prevents all side play. This is very useful where you have to cut a log as near as possible the same length on both sides. It is very easy even for experienced men when they cut a log, say, 4ft. in diameter, to find they are three or four inches longer on one side when they get through the log. With this device you mark the log on the top and on the side you are working the board Then place your board in line with the two marks and it will guide the saw. The log will be the same length wherever you measure it.—"Wood Splitter," Taurangaarere.



When sawing single-handed, especially on hillsides, the device shown is both simple and efficient. The usual handles are dispensed with and a long supple stick is used as shown. Thousand jacket or mokomoko is first rate. This bow stops side play and saves time against driving and altering stakes.—Bushie, Frasertown.



When one man is using a two-handled crosscut saw, cut two old bicycle tubes and tie one end of each to the saw handle. Now tie the other ends to pegs driven in the ground, so the tubes will form a V. The log should be near the end of saw (as in sketch) before the pegs are fixed. The tubes will draw the saw back every time.—J. S., Collingwood.



HANDLE FOR SAW

A fork of a sapling makes a more comfortable handle for the crosscut saw than the ordinary straight handle. A suitable fork is selected, and shaped as indicated in the drawing. The angle of the handle allows the hand to rest on it, with less bending of the wrist.—J.V.R.—Sydney, New South Wales.

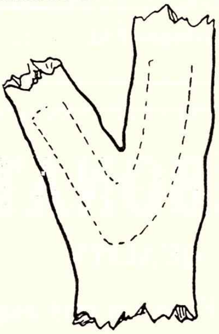


FIG 1

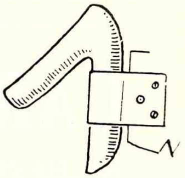


FIG 2

LEATHER BELT DRESSING

A good belt dressing is easily and cheaply made by powdering up some resin and pouring raw linseed oil on it. The mixture is left for some days—being stirred now and then. The liquid portion is then poured off and will be found to give good results when used on leather belts.—J.E.D., Palmerston North.

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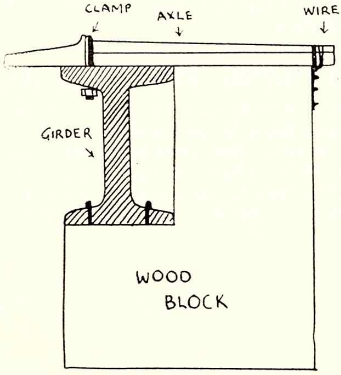
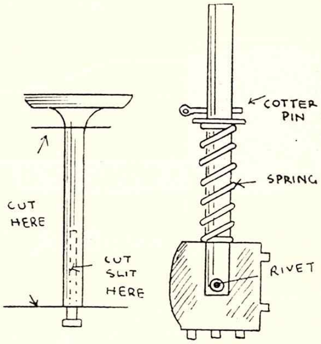
RAILWAY-IRON ANVIL

To construct a very cheap and useful home-made anvil get a block of totara 18 inches square and cut out as illustrated for the anvil to stand on. Next get an axle from an old bullock waggon and cut it off about 2ft. from the end. The other necessities are a clamp (which will be found with the axle of the waggon) and the end off a bridge girder, which can be got from an old timber trolley at any deserted sawmill. The girder will already have the two holes bored through it and the clamp will fit them. Stand the girder on the block and secure it by driving in a few 6in. nails and bending them over. Then place the axle end on top and secure the one end by putting the clamp through the girder and screwing the nuts up tight. Then take three thicknesses of wire and wrap them round the other end of the axle and staple firmly to the block. The anvil is then complete.—"Squeak," Martinborough.



VALVE GRINDING TOOL

A very handy valve grinding tool can be made from an old valve, a nail, a flat piece of hoop iron about 1½in. square with a hole in the centre, a cotter pin and a short spring. This tool can be used for any type of valve if made properly. First of all cut the head off the valve stem and also the small nob on the other end. Next cut a slot in the stem at right angles to the key hole and wide enough to allow the piece of hoop iron to turn freely in it. Bore a hole through the stem half way up. Then, with a file cut the desired shapes in the edges of the hoop iron as illustrated. When completed, place the cotter pin in the half-way hole, then place the spring on the stem, then the blade in the slot and rivet loosely. This is used in a breast drill.—B.M.M., Timaru



CYLINDER HEAD LIFTER

A simple and effective tool for lifting off cylinder heads can be made up from the base of an old spark plug and a piece of rod. Slip the rod through the centre of the plug base; rivet the lower end and put a handle on the other. With one of these in each of the front and back plug holes, the lifting of a head is a simple matter.—Amos, Garston.

FOR THE CAMP COOK

When out camping a primus is often used for cooking, but it is sometimes difficult, as one cannot cook two pots of food at once. Take a kerosene tin and cut one side out of it. Bend the edges back and put the tin over the primus. A small stove is thus made.—"Handy Man," Dargaville.

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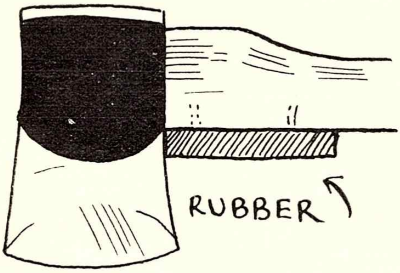
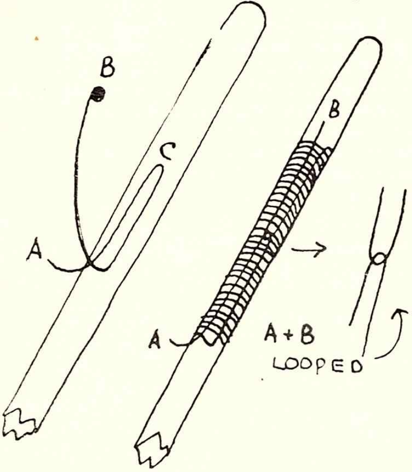
PROTECTING AXE HANDLE

To protect an axe handle when splitting wood, screw to the axe handle, as shown, a piece of rubber off an old motor tyre It will protect the handle from wear when splitting logs or hard wood. The rubber also makes the chopping very much easier for your shoulder, should the axe slip and overreach the log.—W.E T., Waihou.



BINDING SPLIT HANDLES

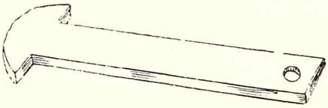
Here are instructions on binding axe or shovel handles. Commence by laying a loop along the handle a little longer than the intended binding, as in Fig. 1. A is the short end and B is the string for binding Starting with this end (B) bind along to the end of the loop C. Cut off B here and put it through the end of the loop C. By pulling firmly on A, B will then be drawn under the binding as in Fig 2. After cutting off the ends flush with the end of the binding the ends are left looped together underneath the binding. There are no knots and it will never move or slacken. For the last nine months I have been using an axe bound in this manner.—"Joe." Apiti

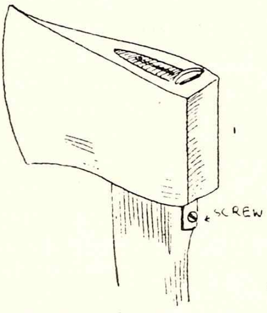


Take a piece of fine lacing wire. Place a small tack in the handle where the start of the binding is required. Bind with the wire as tightly and closely as possible, and finish off with another tack. Solder the whole bind and rasp or file off smooth. The tacks will also help to hold the bind in place.—Mack. Te Pohue.

SECURING THE AXE HEAD

It is not always possible to tell when an axe head is fastened securely enough to prevent the possibility of accident, especially when using a heavy axe in winter, but by using the simple method shown in the drawing, the axe may be made perfectly safe. A pin is made of one-sixteenth-inch sheet iron to the pattern shown, and after the head has been wedged in place, the pin is driven in until the shoulder bears against the head. A screw is then driven into the handle, through the hole in the pin; this will keep the head from flying off, even if the wedges loosen and drop out —L.E.B., West Ryde, N.S.W





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MENDING A SHOVEL

Sometimes the handle of a shovel will break as in Fig. A. To mend, file off all jagged edges and corners and drill four 5-16in. holes (Fig. B). Obtain a worn shovel and cut to shape in Fig. C, and drill holes corresponding with those in Fig. B, and rivet to the back of the broken shovel.—N.J.C., Eltham.

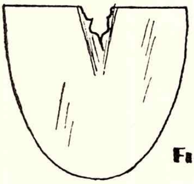


Fig A

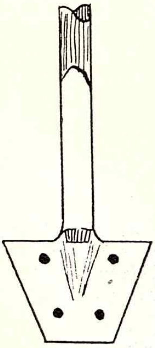


Fig. C.

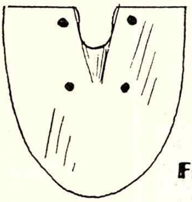


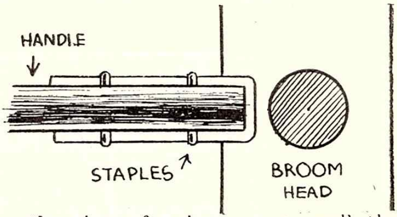
Fig B

THE WATER RAM

The following device is a great saving of time where rams are used as a source of water supply. The air cylinder of the ram frequently becomes "waterbound." To be able to correct this condition quickly, take the dome (the air cylinder) of the ram to an engineer and have a hole bored and tapped large enough to screw an ordinary valve from a motor-car tube into the top of the dome. All that is then required is an ordinary car pump to refill the dome with air, thus forcing out all water. I have tried this out for six months successfully.—C.H.O., Wangaehu.

BROKEN BROOM HANDLE

In using yard brooms they have an annoying habit of the handle breaking in the head of the broom. Then you have to get a brace and bit to remove the broken piece and fit the handle in anew What I now do is to tar the end which goes into the head to prevent it from rotting, and put a piece of wire (cheese crate wire) over the end of the handle as illustrated. The wire needs to be long enough to twist the ends together so as to be able to use the claw of a hammer to pull the wire and piece of broken handle out.—H.M.B., Palmerston North

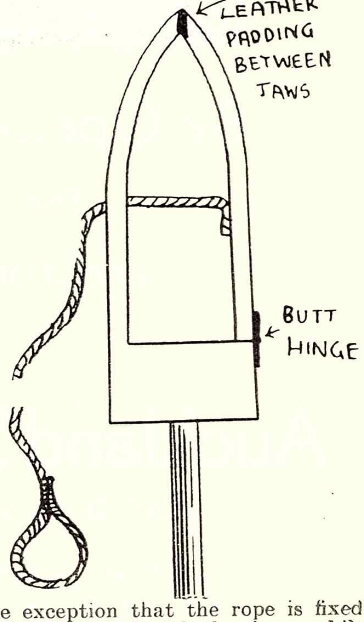


PRESERVING HANDLES

To preserve the handle and save the hands from getting blistered when using a shovel, etc., bore a ½in. hole down the end of the handle 1in. deep. Keep a piece of cotton waste soaked in oil in this and a cork in the hole. This oily waste can be rubbed on the handle occasionally.—E.S.K., Dannevirke.

LEATHER SEWING CLAMP

This very efficient leather sewing clamp will be found invaluable on any farm. The drawing explains itself, with the exception that the rope is fixed to the hinged side of the jaws while it passes through a hole in the other side. The jaws are cut out of a piece of 4in. x 3in.—J.T.I., Tolaga Bay.



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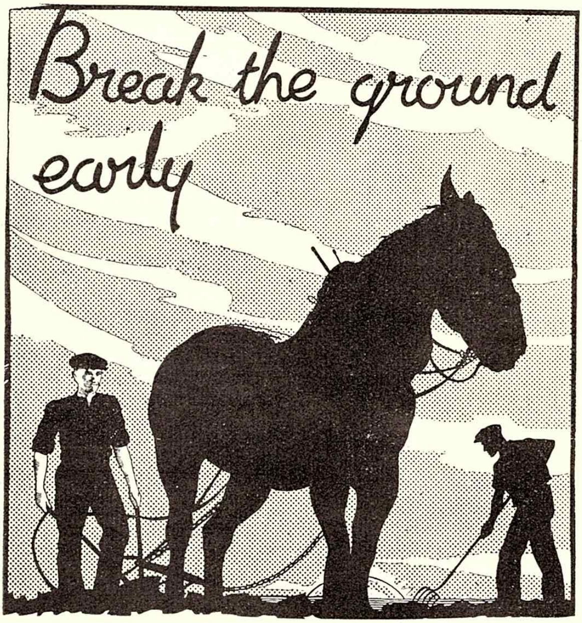

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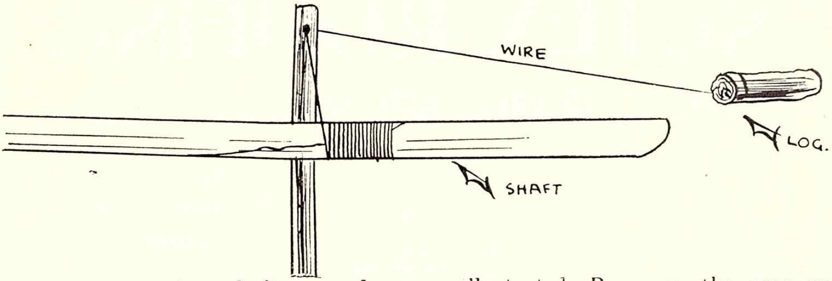
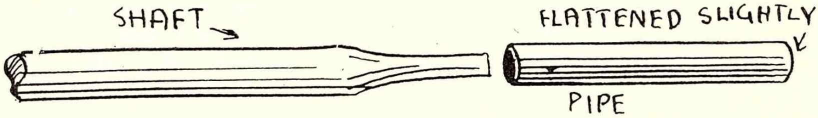
MENDING BROKEN SHAFTS



To mend a broken shaft on a dray or cart, prop the cart up by the sound shaft; take a length of wire about a chain or more long and fasten one end to a heavy log of wood. Bring the other end through the hole in a short batten and wind round the shaft as illustrated. Begin on the near end of the shaft and wind up, keeping the rings close together. The start and finish of the binding should be done by making a small hole in the shaft, into which drive in an inch or so of the wire. This makes a very neat job.—C.G.F., Nelson.



Here is an idea for fixing broken shafts when they are worn through by the tugs. Trim the shaft down about 10in. or 12in. back to fit a 2in. to 3in. pipe. Bore one ¼in hole about 6in. from the end of the pipe, and fasten on to the shaft with a rivet. If the pipe is flattened a little at the end the tug will slip on easily. Cut the pipe 12in. to 14in. longer than the shaft broken off.—N.J.C., Eltham.

REPAIRING LEAKS

Small circular holes in iron, enamelled or galvanised vessels can be readily filled by inserting a small piece of lead and riveting this carefully. In the case of a large hole of irregular shape, it is necessary to proceed in a different way. On the outside of the pan glue several thicknesses of paper, with a hole cut out in the centre of each, a little larger than the hole in the pan. Then glue a piece of paper, without the hole, over this, thus forming a mould for the lead, which is poured from the inside of the pan. Enough lead should be applied to form a head of the inside similar to that formed on the outside by aid of the paper mould.—M.P.. Thornleigh, N.S.W.

The following simple mixture is very useful to have on a farm for permanent and temporary repairs to leaky roofs and tanks. By using this mixture and a piece of raw calico for a patch, any leak can be repaired and will last for years, especially when the iron is rusty and cannot be repaired with solder. This mixture is also anti-sulphuric, and is an excellent paint for motor-car batteries and boxes. Tar 4 gallons, terebine 1 quart, varnish ½ pint. Heat the tar until nearly boiling then add the terebine and varnish. Mix well and use while the mixture is hot. (This mixture is highly inflammable when mixing and care should be taken when heating) —"Cable," Seddon.

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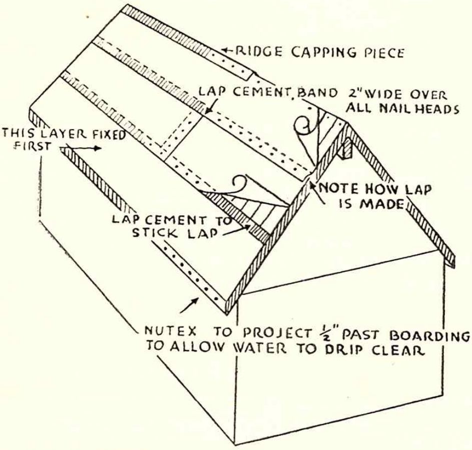

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How to Estimate Quantity Required.

To determine the area of a gabled roof, multiply the length of the ridge A to B in figure 1, by the length of the rafters A to C in figure 1; the result will be the area of one side of the roof, which multiplied by two will give the total area of both sides.

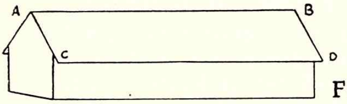

FIG. 1

To compute the area of a hip roof, multiply the length of the eaves A to C in figure 2, by half the length of the rafters B to D in figure 2. This gives the area of one end of the roof, which, multiplied by two, gives the area for both ends.

To determine the area of the sides of the roof, add the length of the ridge D to F, figure 2, to the length of the eaves, C to H, figure 2. Divide the sum by two and multiply by the length of the rafters E to G in figure 2. This gives the area of one side of the roof, which, multiplied by two, gives the area of both sides.

Each roll of roofing is made up of what is known as two roofing squares to the roll. A roofing square is 100 sq. ft., so that by dividing the total square footage area of the roof by 100, the number of roofing squares may be determined.

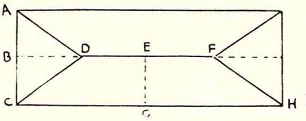

FIG. 2

Hints on Application of Roll Roofing.

Over the rafter should be nailed sarking boards of 6 x 1 timber. On this surface, beginning at the bottom or eaves of the roof, lay the first sheet of felt lengthwise, or from end to end, of the building, allowing sufficient overhang at the eaves to allow for bending over and nailing to the edges of the sarking. Then apply the next sheet of felt so as to allow the lower edge of the sheet to lap 2 inches over the top edge of the first layer of felt which has already been applied.

Apply the Bituminous Cement generously between the laps of the felt and nail carefully and securely, spacing the nails about 2½ inches. After nailing give a heavy coat of cement over the nail heads and the edge of the lap. Proceed with each successive higher sheet in a similar manner until a point is reached near the ridge. After applying both sides of the roof in this way, finish by applying the top or cap sheet of felt over the ridge so as to allow the edges of the cap sheet of felt to lap over the top sheets of felt on each side of the ridge, and nail and cement as before. The ends of the sheets of felt should be bent over the ends of the roofing boards and fastened by nailing in a similar manner as at the bottom of the eaves.

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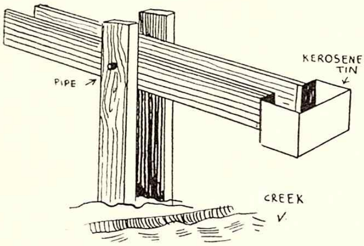
LIFTING WATER

For those who will have to lift water from creeks this summer the following idea may be helpful. Place two posts four feet high about two feet apart on solid ground close to the water's edge. Use three boards 12in. x 1in. to make a trough. Leave the bank end open, and to the other end attach a kerosene tin to act as a dipper. Bore a hole near the top of each post and through the sides of the trough about the middle of their length, and pass a piece of piping right through, so that the trough works in see-saw fashion. The length of the trough will be determined by the nature of the creek and the height of the bank.—"Chaffie," Waihola.



RUST JOINT CEMENT

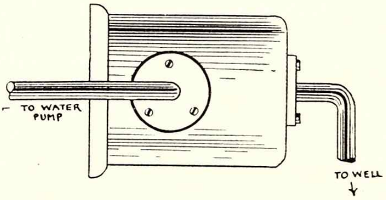
It is sometimes desired to fix a pulley absolutely immovably on a shaft or to make quite permanent the screwed joint between two pipes. This can be done by applying a cement made as follows:—Two parts of sal ammoniac (Ammonium chloride), one part of flowers of sulphur, and 200 parts (all by weight) of cast iron filings, or borings mixed with water to form a paste, and applied to the parts required. Some time must be allowed for the cement to set.—J.E.D., Palmerston North.

A WATER SUMP

A dripping tap makes the place very muddy, especially in damp weather. This can be remedied by sinking an oblong box under it. Then fill the box with shingle. This is a very effective method if carried out properly.—J.C., Wairoa.

SAND AND GRAVEL TRAP

The water for my cowbails is derived from a pipe driven 25ft. into the ground. I was always troubled by sand and gravel blocking the valves of the pump, necessitating the pump being dismantled every day to clean it. I tried all kinds of devices without success. They would catch the gravel, but not the sand, which was very fine. I had two old engine silencers in the shed and in desperation I attached one of these on to the pipe between the ground and the pump. This was successful. I have not found sand or gravel in the valves since. The silencer is detached and cleaned out every few months.—C.W.M., Ohau, Levin.



PUMP WASHERS

When it is necessary to renew leather washers in pumps, etc., soak the leather to be used for 24 hours to soften it. Bore a hole in a piece of hardwood ¼in. larger than the diameter of the plunger and about 1½in. deep. Make a plug out of hardwood just the diameter of the plunger. Next oil both well and place the leather in position over the hole and place in a vice. Slowly screw up the vice until the plug is far enough in the hole to form the flange required on the washer.—E.E.P., Aorangi.

LEAKS IN TROUGHS

To stop a wooden trough from leaking, a simple way is to melt mutton fat till very hot, then stir in sifted ashes until the mixture is of the consistency of mortar. Apply to the leaks with a trowel or old table-knife. This will set like cement.—W.M.A., Karitane.

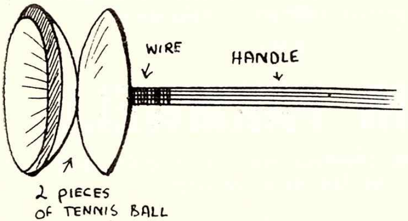
That Article You Invented for Yourself may be Equally Useful to Others — Consult A. J. PARK & SON, PATENT ATTORNEYS, AUCKLAND.

DRAG FOR DRAIN MAKING

A serviceable drag for making drains through a swamp can be made from a potato fork that has been broken through the steel of the handle. Cut off the steel stump of the handle close enough to the prongs to allow a half-inch hole to be bored and put a bolt through and fix to a hay fork handle just the same as a hay fork is fixed. —E.S.K., Kiritaki.

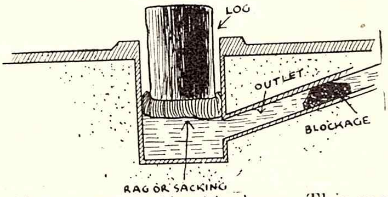
BLOCKAGE IN WATER PIPE

To remove an obstruction in an unknown position in a water pipe, the assumed internal diameter of which is 1in.:—A rough idea of the position of the blockage can be gained by making a V-shaped notch with a file in the top side of the pipe. This should be made to such a depth that a sharp-pointed nail will drive a very tiny hole through. If the water is blocked below this, it will spurt up. It is then necessary to try lower down. If dry, then the blockage will be between the two notches. (It is advisable to turn off the water and solder these holes before the metal corrodes. The smaller the hole then the stronger the soldering will be.) Next unscrew a union above the lower notch and insert the plunger and work vigorously. The compression and suction is sure to dislodge the obstruction. The plunger is made as follows:—Two rounds are carefully cut from an old tennis ball, and slightly more than 1in. in diameter. A straight, round handle 3ft. or 4ft. long is whipped with fine wire at one end to prevent splitting. The rubber washers are placed convex side to convex, and tightly screwed into the whipped end of the handle. The washers should not fit too tightly in the pipe.—"Foot-Rot." Takaka.



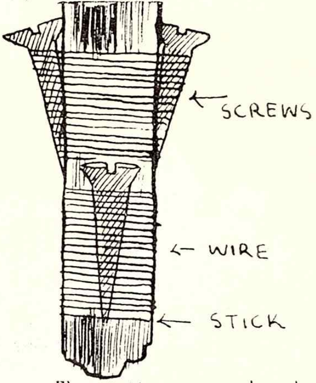
BLOCKED DRAINS

To clean out a drain that is apparently blocked, take a piece of round or square wood, as the case may be, about an inch longer than the depth of the sump; and of such a diameter as to allow it to fit tightly in the sump after several pieces of sacking have been laid over the end. This sacking acts as a washer. Jump or tread hard on the top of the log to force it down on top of the sump-water. The water is forced hard up against the blockage. This may be tried three or four times—if the water still fails to get away then the drain will probably have to be opened. Care should be taken when jumping on the log that it does not tilt sideways or a sprained ankle may result. Throw an old bag over before jumping, or dirty water may be squirted up.—"Foot-rot." Takaka.



CLEANING WATER PIPES

Dirt or scale are quickly removed from the inside of pipes or tubes with this easily-made tool which consists of a stick, fine wire and a number of wood screws. The latter are placed about every three or four inches along the stick in opposite pairs, and are bound with wire to keep them in place.—H.D.M., Hakataramea



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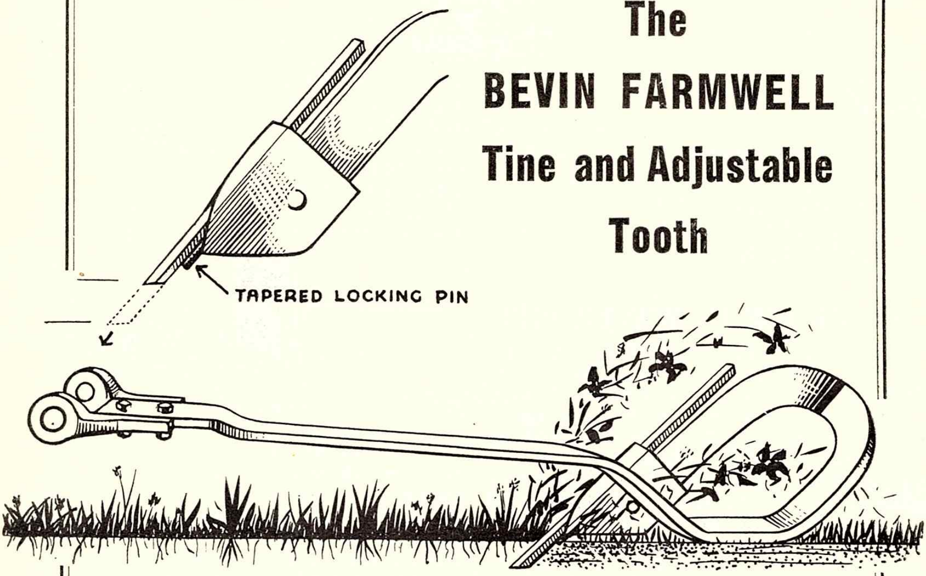

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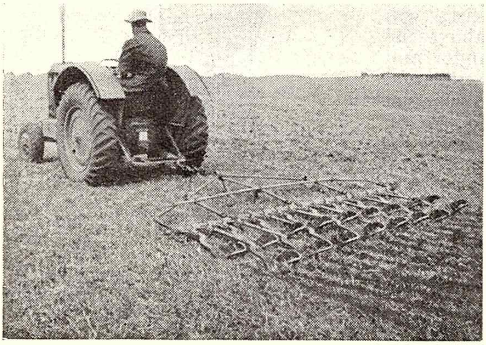

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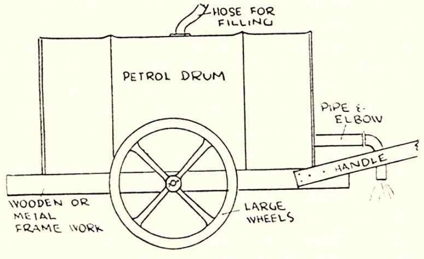
CLEANING DRAINS

When using a drag for cleaning out creeks and drains, place on the left side of the handle the grip off a scythe handle. This addition lightens the labour considerably because the drag can be turned over on its back when it has been driven into the weeds, water cress or willow roots. Its back acts as a sledge, and the grip, then being on the right side, gives one wonderful lifting and throwing power especially when the banks are deep or steep.—W.J.G., Masterton.

WATER CART

This handy watering cart, which is a great help when watering large patches of vegetables, is simply an oil drum mounted on a frame which has two large wheels. Two short lengths of pipe and an elbow are screwed in the small bung-hole at the end of the drum. These can be used as a tap as well as for directing the water. The flow of water can quickly be stopped by tilting the cart back and letting it rest on the back end.—F.B., Havelock North.

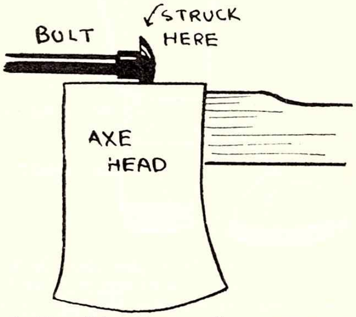


"THE FARMER'S PAINT"

Take two gallons of coal tar and add one pint of mineral turpentine. Stir till the turpentine mixes. One who has never tried would think it is not going to do so, but it disappears suddenly. This mixture can be applied to anything which tar assists to preserve. Using tar in this way does away with the necessity of boiling. It spreads well and takes only 1½ hours to dry, and when finished leaves a shiny, smooth surface. —L.T., Colville.

REMOVING RUSTED NUTS

Many farmers find trouble in taking nuts off carriage bolts which have been in timber for some time. By squaring the bolt-head on two sides—by tapping it on the axehead, as in the diagram—before putting the bolt through the timber, it is always possible to hold the bolt with a second spanner, and prevent it from moving while unscrewing the nut. This often saves much time when mending broken gates etc. —R.P., Tokomaru Bay.



USE FOR INFLATIONS

When draining swamps or cutting scrub slip three old milking machine inflations over the handle of the tool being used—grubber or slasher. Space them one near each end of the handle and one near the middle. These will save the hands from blisters and chafed skin.—A.S., Putaruru.

SAVING KEROSENE TINS

Run a piece of No. 8 plain fencing wire around the bottom of the tin and solder it firmly. This protects the bottom of the tin from wear, and so lengthens its life.—Togo, Manutahi.

FIRE LIGHTER

A piece of pumice about the size of a duck's egg with a wire handle, kept in a two pound fruit tin with a little kerosene in it is an excellent torch for lighting the fire in the mornings.— H.A., Marton

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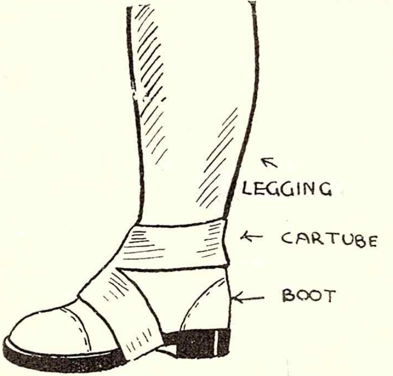
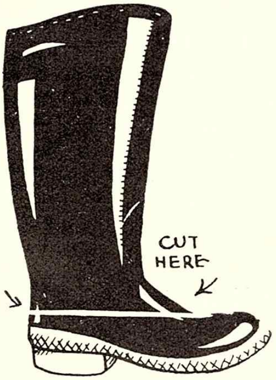
HINT FOR LEGGINGS

To keep down unruly leggings take a piece of car tube about two inches wide and cut it up the centre stopping about one inch from the top. Now slip one loop round your legging and the other round under the bottom of your boot.—Cowboy, Mosgiel.



Cut an old pair of gumboots through the ankles, as illustrated, and use the tops for leggings. They will last for years, can be kept clean by washing and are suitable for wearing while doing all kinds of farm work.—" Mother-farmer," Cambridge.



REPAIRING GUMBOOTS

A hole in any part of a gumboot can be mended by melting equal quantities of resin and rubber (the inner tube of an old motor tyre is best). When melted, spread a small quantity on a piece of strong material large enough to cover the hole, then press very tightly and firmly and spread another layer of the mixture over the top and rub some powdered chalk over all. A hole mended in this way is quite watertight and will outlast any other part of the boot.—J.C., Frasertown.

SPLITTING MANURE SACKS

Few people know that for making a stack cover, super bags can be ripped open by starting the seam and then putting the heel on the sack and pulling. Sacks can be ripped open this way very quickly, whereas cutting all the seams is a laborious job. By putting a wire from one side of a shed to the other the sacks can be held at the right height for sewing. You can then walk along and sew just above the wire.—E.S.K., Dannevirke.

PATCHING SACKS

A better method of mending sacks, than sewing on patches, and evidently much quicker, while still as efficient under any test is as follows. Make a thick paste from flour. Turn the sack inside out, and with patches of sufficient size to more than cover the hole, cut from other sacks beyond repair, stick in the following manner. With an old paint brush, smear the paste thickly all round the patch on one side. Place this over the hole, press down and allow to dry before patching the other side (if necessary), or turning right side out again.—T.D.R., Motueka

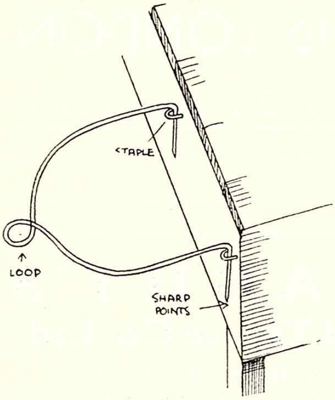
TO WATERPROOF SACKS

The following is a recipe that was used by one of the first sluicers in this country to preserve his canvas hose (on the Shotover River over forty years ago). I use it for horse covers, stack covers, etc. To coal tar add as much fat (I use rendered mutton fat) as will make the mixture from one third to one half fat. Heat and apply to fabric, boiling hot. Hang to dry. The smaller quantity of fat will make the fabric fairly stiff in cold weather. The larger quantity of fat will be inclined to bring off some of the tar. Care must be taken to have something handy to cover your boiler, as it is very apt to take fire—H.E.B., Gore, Southland.

Our pamphlet "Advice to Inventors" contains valuable information for inventors—Henry Hughes Ltd., Patent Attorneys, Wellington or Auckland.

BAG SUPPORT

A wire bent and sharpened at both ends, as shown in the diagram, will hold the "dag" bag open beside the classing and rolling table at shearing time. Two large staples are driven in about 2in. or 3in. closer together than the width of the bag. The sharpened ends of the wire can then be used to thread through the bag, then through the staple, and through the bag again, holding it fast, and at the same time at right angles to the table. Where the wire is bent into a single loop is the furthest point from the table. A slit put in the bag here and the loop only passed through will hold the outer side of the bag.—F.D.W.H., Mt. Roskill



WATERPROOF DRESSING

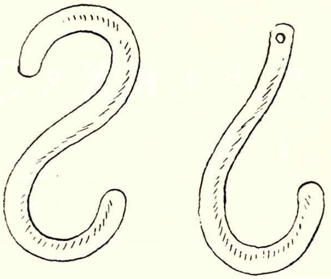
This waterproof dressing is invaluable for the car hood, last year's oilskins, cow covers, etc :—1 pint boiled linseed oil, ½lb. mutton fat (suet), 6oz. beeswax, 4oz. resin. Melt these thoroughly and apply with a brush. Highly inflammable, so heat over an outside fire.—"Motherfarmer."

A PAINTING TIP

When painting, place a strip of wood across the mouth of the paint tin. After dipping the brush in the paint wipe it on the wood. The paint will then drip back into the tin instead of running down the outside as it does when the brush is wiped on the edge of the tin. —J.S., Rockville.

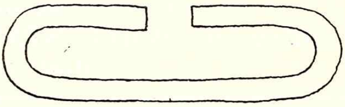
HOOKS FROM HARROWS

Useful hooks and S-hooks can be made from the bars of old harrows. For an ordinary single hook, cut a piece of harrow iron about 8in. long with the hole where the tine goes through in one end of it. Heat it in a fire and bend into shape as shown in the sketch. Put a split link through the hole and fasten to the chain, and you have a good, strong hook. For an S-hook, take a piece of harrow iron, slightly longer, heat it, and bend into shape as shown in the sketch.—G.C., Mossburn



C. HOOK

The C hook is a much better hook than the common S hook. It very seldom becomes unhooked if the plough chains become loose owing to the load suddenly running forward when going down a hill. It can be made out of any piece of iron by anyone, whereas the S hook is rather hard to make by an amateur. First bend the iron to the proper shape and then cut off, leaving one inch opening.—J.T., Pleasant Point



IMPROVISED PACK NEEDLE

When a pack needle is not procurable take one of the patent keys for opening tin stuffs. Straighten out the handle, file to a point and bend to required angle. The eyelet hole in the end serves as an eye to put the thread through.—R.A.W., Tokomaru Bay.

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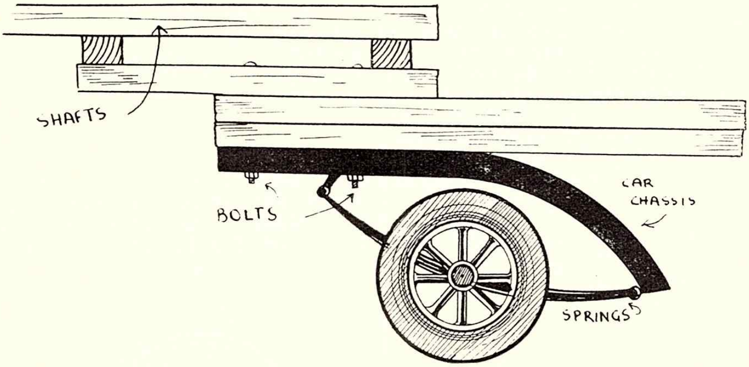
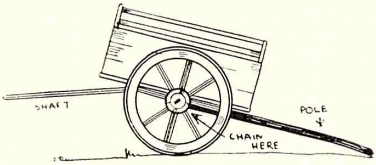
A CART FOR THE FARM.



Mount three 3in. by 3in boards, 4ft. long, and bolt securely to the chassis Then bolt another 3in by 3in. so that it overlaps 2ft. over the front. To this bolt two cross-pieces and then fit the shafts at the required width. This gives a simply-made and serviceable farm cart.—F.J.H., Makara.

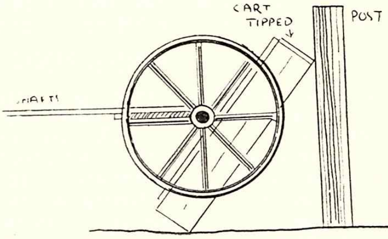
BRAKE FOR DRAY

Most brakes attached to drays throw extra weight on to the horse's back, but this idea has the opposite effect, taking all the weight of the load off the horse when descending a steep hill. Obtain a pole about nine feet long and nine inches thick. Bore a hole big enough to pass a light chain through about a foot from the end of the pole. Now rest this end of the pole on the axle of the dray as shown in the sketch, the light chain being wrapped around the axle to keep the pole from slipping out as the dray goes forward, and then made fast. Then tip the loaded dray on to the pole, which acts as a skid and a brake, allowing the horse to walk free without any breeching to do. When not required, the pole is either carried on top of the load or allowed to trail behind after the dray has been pulled back to its normal position.—"Dave," Poverty Bay.



GREASING THE DRAY

A very simple method of greasing a dray when no jack is available is as follows:—Back up to a strainer or tree as far as possible. Tip the dray, and then back another foot or two. The ends of the dray dig into the ground, and it overbalances against the tree, both wheels lifting clear of the ground.—J.V., Hikuai



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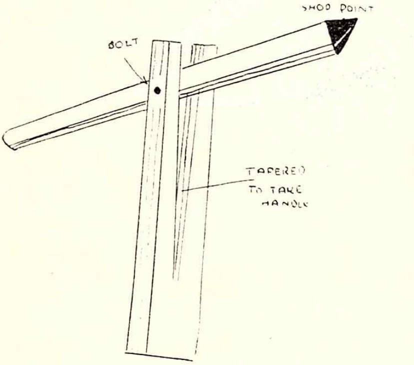
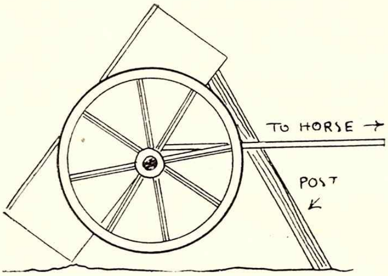
JACKING UP THE DRAY

A jack for greasing drays and carts can be made as follows. It has many advantages, among which are that it requires no chain or peg to hold the lever in position when the load is on the jack. Make the upright of 4 x 2 inch hardwood cut, as illustrated, to take a 3 x 2, also of hardwood. The two are connected by a ½-inch bolt placed one inch down from the top of the 4 x 2 and slightly out of centre. This bolt passes through the 3 x 2 six inches from one end, while the other is tapered to a handle. The end of this 3 x 2, which is used for lifting, is shod with iron as illustrated. The 4 x 2 is cut out sufficiently to let the 3 x 2 get over centre when the load is hoisted, and it stays in this position securely while the wheel is being greased. — W. Coupe

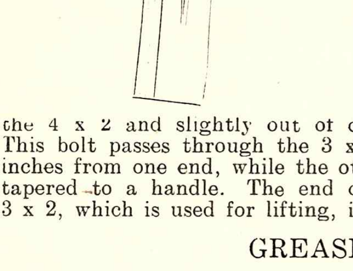


To jack up a dray to remove its wheels for greasing all that is needed is a horse in the shafts and a sound fence post. Tip the dray; back the horse so that the wheels come off the ground; stay the body of the dray with the post at one corner in front. When that side is done, a similar operation will lift the other wheel.—A.C.C., Hastings.



GREASING THE DRAY

All that is needed to jack up a dray is two pieces of timber. Almost any timber will do so long as the upright piece is straight on the top, and about the height of the undercarriers at the back of the dray. The length of the upright piece is governed by the thickness of the lever piece which rests on top and also by the height of the cart. If the horse is in the cart, just block the other wheel for safety. First place the upright piece near the protruding undercarriage at the back; place the second piece of timber on top of same and under the undercarriage as in diagram. Then press down on the lever thus raising the side of the dray. Slip the long end under the protruding piece on other side. The wheel is then free of the ground and may be taken off and greased.—T.D.R., Motueka.



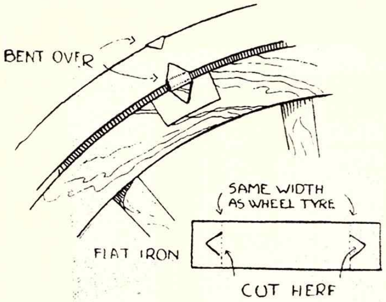
FIXING LOOSE CART TYRES

To keep old tyres on carts after they have become loose, as is so common in dry weather, instead of wiring, chocking or nailing, bore several holes immediately under the iron through the fellows and put bolts in. Put a good washer each side so as to catch the edge of the tyre and screw up tight. This makes a good temporary job. Cover the wheels with wet sacks to swell the fellows.—T.D.R., Motueka.

Don't Take the Blame—
INSURE WITH F.A.M.E.

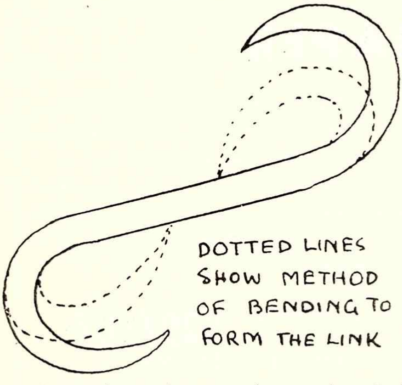
WAGGON WHEELS

Instead of wiring the tyres of the waggon or dray when dry weather shrinks the wood and causes them to loosen, use strips of flat iron, as shown. These make a neat, lasting job. The strips are 1in. or so longer than the width of the tyre, and V notches are cut near each end. When the strips are slipped under the tyre, the V-shaped tabs are bent over it and the ends of the strips are bent down over the felly of the wheel.—The Dipper, Nuhaka.



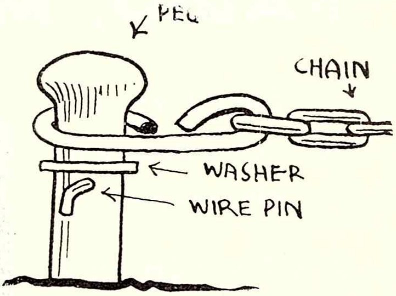
MENDING BROKEN CHAIN

Should you have a broken chain and no split link handy, a substantial repair can be quickly made by taking an ordinary galvanised meat hook and bending the points back to the shaft as shown in the diagram. A few sharp blows with the hammer will do this job and it is a permanent repair.—"Original," Nelson



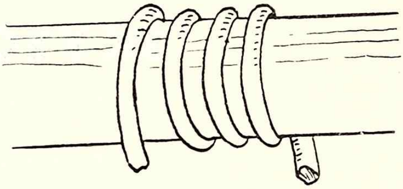
CHAINING THE DOG

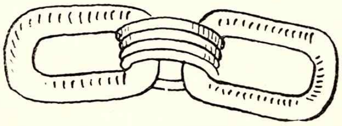
For those who have to deal with dogs the accompanying idea will prove useful in keeping the swivel of the dog's chain clear of rubbish which generally works in to the peg and twists it up sometimes preventing dog from entering its kennel. I have found it will keep the swivel functioning even if there is 2in. of litter on the ground.—G.A., Albury



MENDING BROKEN LINKS

A quick and easy way to mend a broken chain is to take a piece of wire and wrap it round a hammer handle or anything round, as though making a spring. Then slip it off, squeeze it together, and thread it through both links, winding it round till both ends are through. Then twist the ends together. This will be found an easier way than reeving the wire through, and you can put as many thicknesses as you like.—"Farmhand," Havelock North.





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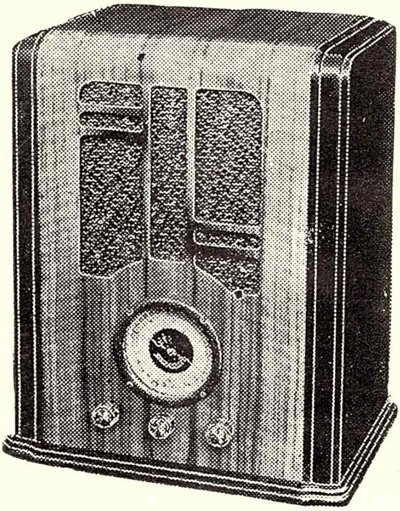

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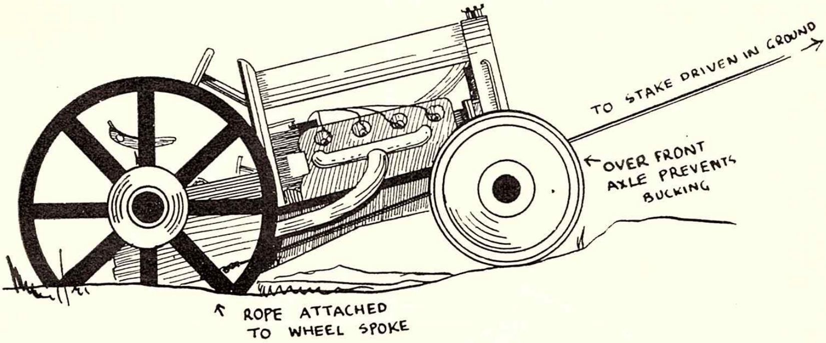
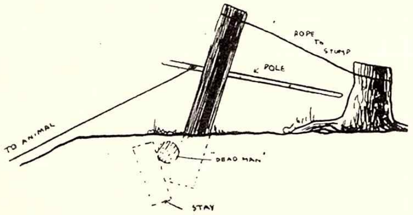
PULLING OUT BOGGED TRACTOR


TO STAKE DRIVEN IN GROUND
OVER FRONT AXLE PREVENTS BUCKING
ROPE ATTACHED TO WHEEL SPOKE

The sketch illustrates a sure, safe and simple method of pulling a tractor out of a bog. Two wires or wire ropes are tied to the two rear wheels of the tractor and led forward over the front axle to an anchor of some kind in front. As the tractor is driven forward, the wheels wind the wires around themselves, and so pull the tractor forward. The wires are led over the front axle as a precaution against "bucking." This method can be used for backing also. Lorries can be pulled out of bogs in the same way.—G.V.A., Havelock North.

PULLING ANIMALS OUT OF BOG

Where no horse or other power is available to pull an animal out of a bog, put a stout post into the ground at an angle from bogged animal. Do not ram it, but stay the bottom with two pieces of wood, preferably round, and about 1ft. in length. These should be placed beneath the surface of the ground. On top of these place a small log as a "dead man." For greater resistance to strain, one can attach a strong rope with a bowline knot to the top of the post and tie securely to the trunk of a tree, or stump, or anything solid which may be handy. (This rope, although a help, is not absolutely necessary.) Secure a strong pole, preferably green, and tie the rope which is attached to the beast about one end of the pole. Now wind the pole round and round the post, which will also turn and gradually wind up the rope which is attached to the animal. I have never known this to fail.—O.S.A., Waitomo Caves



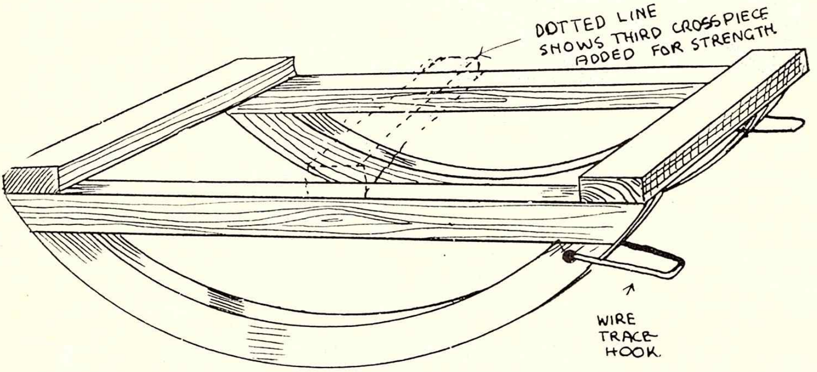
BOGGED CARTS

One of the common experiences of farm life is to be bogged with a cart or dray, down perhaps to the axle. This is how I got over the difficulty on my last experience. Take off the leader and hook him on to the wheel that is bogged. A chain, or some wire doubled and put around the spoke and over the tyre, fixed far enough back to give a good pull is sufficient for the job. Tie well back past the top of the wheel, about three-quarters of the way up the other side, so that the first strain will be at such an angle as to pull forward without any chance of slipping. Stand the team up to a pull together, and this will give all the extra purchase needed to lift the wheel clear. If the wheel should happen to slip, tie a piece of wood to the bottom of the wheel or strap a piece of timber to a spoke to act as a grip to lever against.—T.D.R., Motueka.

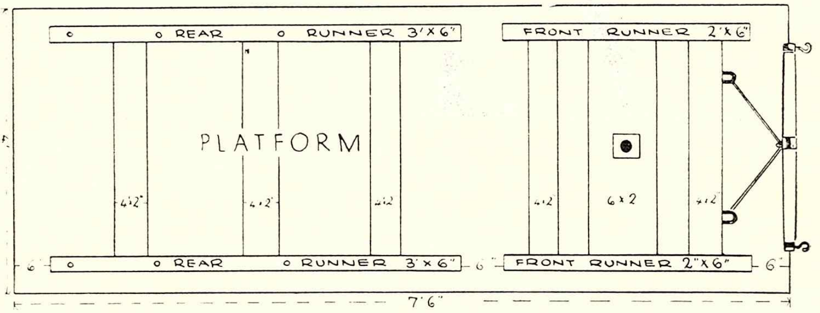
The Health of the Stock is the Wealth of the Farmer—
OSMOND'S WORLD FAMED REMEDIES.

A SLEDGE FOR ROUGH COUNTRY

This sledge, generally known as a "rocking sledge," is extremely useful in rough bush country, especially if creeks have to be crossed. First a tree must be found that has a curve in the grain, and from this split a pair of runners shaped like a new moon. These are trimmed down. Then take a plank and fix it to the ends of the runner as shown in the diagram. Do the same to the other one. These are joined by two cross pieces and a third may be added to strengthen your sledge. Bore a hole in the head of each runner and through this put a piece of fencing wire that has been twisted. Join the ends of wire thus forming a loop to hook the traces to, and the sledge is complete. I have not given any measurements as it is best for the builder to make the sledge to suit his own requirements. It will go over most obstacles where an ordinary sledge would tip up, or get stuck, and will carry its load over them too.—" Hitler " Waituna



IMPROVED FARM SLEDGE



In this farm sledge, the front portion of the runners is on a swivel to make it easier for the horse. The runners are made of wood 6in. by 2in. and are shod with blacksmith's iron.—R. McB., Havelock North.

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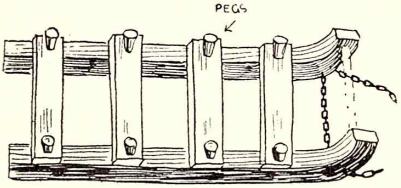
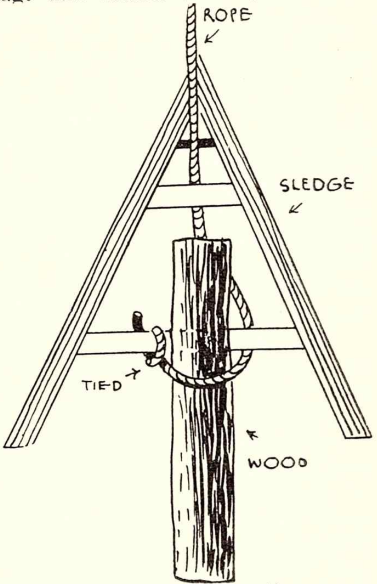
SLEDGE FOR POST CARTING

A quickly-made and serviceable sledge can be made with selected, curved tree limbs for runners. Secure the cross supports by boring holes of either 1¼in. or 1½in. diameter, and pegging them to the runners leaving the pegs protruding above to any desired height as uprights to hold the load in place. This will leave the sledge a flexible one, but if it is desired to have it rigid (and thus able to convert it to an ordinary sledge by placing decking along the supports), all that is necessary is to bore holes in the inside and top of the turn up of the runners and insert a cross piece in them, as shown in the diagram. The necessary tools are auger and axe. — F.D.W.H., Mt. Roskill.



HAULING WOOD

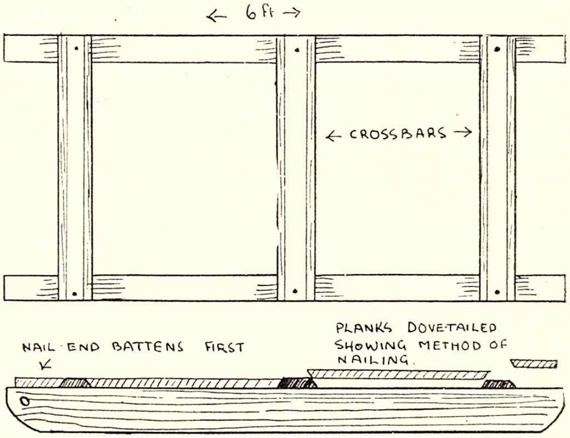
When hauling wood make a forked sledge and attach the rope as shown.



The wood is put under the rope as shown and is firmly held.—R D.F., Dannevirke.

SLEDGE FROM SCRAP TIMBER

The accompanying plan shows how to build a very serviceable and strong sledge with the aid of a few pieces of scrap timber, namely, 6 x 3, 4 x 2, and 3 x 2. The dove-tailing strengthens the sledge considerably, and automatically tightens all joints when nailed. Place the crossbars in position, and then nail the small pieces at each end of the sledge. All joints will then tighten themselves when the others are nailed in position. The cross-bars can be left until last, and there is no fear of them splitting.—C.A.F., West Coast.



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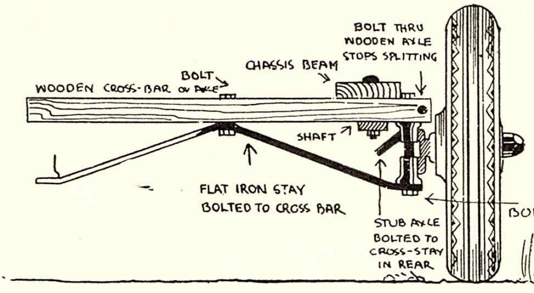
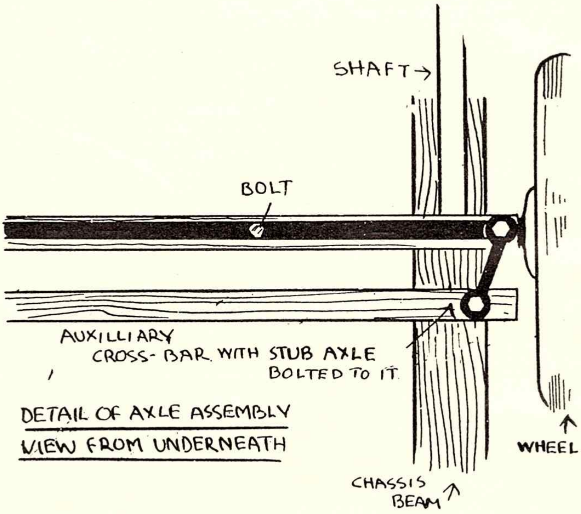
HANDCART FROM CAR WHEELS

The illustrations show an idea for making a handcart or konaki from the front wheels of an old car, complete with the stub-axles The axle of a car is too wide and heavy, so I thought up an idea to do away with it A piece of hardwood is necessary and a piece of flat iron about the same length, also several bolts, including two long ones. Our dairy inspector, who happened to notice the handcart I made, thought it ideal. I think the sketches explain themselves.—L.A.M., Whakapara


BOLT THRU WOODEN AXLE STOPS SPLITTING
CHASSIS BEAM
BOLT
WOODEN CROSS-BAR or AXLE
SHAFT
FLAT IRON STAY BOLTED TO CROSS BAR
STUB AXLE BOLTED TO CROSS-STAY IN REAR
BOLT

DETAIL OF AXLE ASSEMBLY



DETAIL OF AXLE ASSEMBLY
VIEW FROM UNDERNEATH

STEEL SLEDGE RUNNERS

The average farmer finds it impossible to get sledge runners to last. The bought ones cost a lot of money, and they are only blacksmiths' iron. So make your own runners of the best quality steel. Pick up old broken truck springs at a garage. Have them straightened and bored (counter sunk) and then screw on to the wooden runners. Your sledge will now last for years.—Mother Farmer, Cambridge.

REINFORCED CONCRETE TANK

Take an old corrugated iron tank and make holes all around the sides, about 4in. apart. Then fix wire-netting inside and out, holding it together with wire through these holes. Now you can plaster concrete on each side, putting some on the bottom as well.—J.R.B., Eltham

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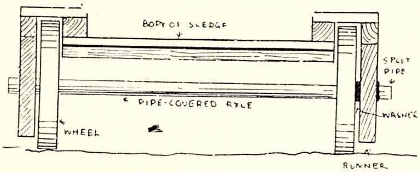
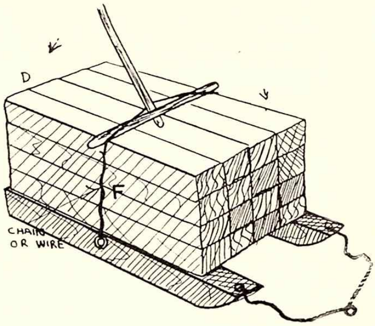
WHEEL SLEDGE

In the accompanying sketch the wheels are off old barrows, the axle being knocked out and the holes rounded by heating in a forge, and made large enough to take a one inch bar. Procure a suitable bar and cut a little longer than the outside measurement of the width between the sledge skids. Over the bar slip a pipe long enough to fill the distance between the wheels and washers placed between the skids. Bore holes about 18in. from the end of the skids as shown in the diagram and about 3in. from the bottom. Now put the bar through the hole, then through a washer, then in turn through a wheel, the pipe, the second wheel and washer, and then through the other hole. Procure a piece of piping a little smaller than the bar. Split the side and force this over the ends of the bar to stop it from shifting. If the wheels protrude above the top surface of the sledge build them in with boards. If barrow wheels cannot be procured, home-made wheels of wood shod with iron will serve the purpose. This sledge is very useful on the farm tracks and roads as the wheels do not catch on banks and bridges.—F.H. Kai Iwi.



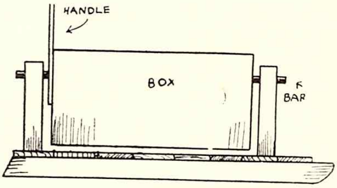
SECURITY IN SLEDGING

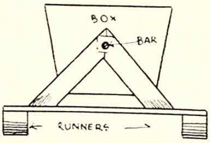
Here is a simple but very effective method of fastening a load on to a sledge with either wire or chain. All you require is two strong pieces of timber such as manuka, one about 6ft. to 8ft. long and the other just a little longer than the width of the load Fasten one end of the wire or chain to one side of the sledge. Put the other end over the load to the opposite side, pull sufficiently to take up the slack and fasten by taking two or three long turns as at F. Now insert the long piece of timber under the wire about four to six inches from the end on an angle, press downward, put the shorter piece under the end, swing the lever round, and then lift right over toward the back. Tie the lever down to the load or sledge. If it requires retightening again just press the lever down again toward D and tie.—L.P. Waitakaro.



A "TIPPING" SLEDGE

The accompanying sketch shows a good idea for a sledge. It is easily loaded and emptied. Put a triangle at each end of the sledge, with a hole through the top, to take a crowbar or bar of iron. This is passed right through the box, so that it swings. If a batten, 2in. by 1in., is nailed on one end of the box for a handle, as shown, it will make tipping easier.—W.V.H., Takaka.





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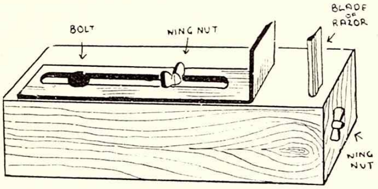
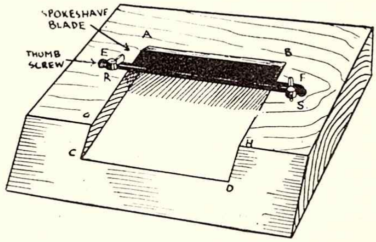
CUTTING LEATHER STRIPS

A leather cutter which I have used very successfully for cutting up hides into anything from bootlaces to saddle girths is illustrated herewith. In the case of home-cured hides, where salt has been used in the curing, care should be taken to keep the blade from rusting as this quickly ruins the edge; hence the screw in the end of the block to allow of its removal. To make the leather cutter, take a block of wood 3in. by 2in. by 9in. Bore a hole 2in. in from the end to fit the stem of a razor blade which is held in place by a screw. This allows the blade to be removed for sharpening purposes. Take an iron or very heavy tin plate 3in by 2in. by 9in.; bend 1½in. at one end at right angles and cut a slot 6in. long by the width of a bolt as wide as shown. This allows the plate to move backward or forward as required. A bolt keeps the plate true. The bolt at the end is used for holding the plate firm when in the required position.—J.G.H., Kai Iwi.

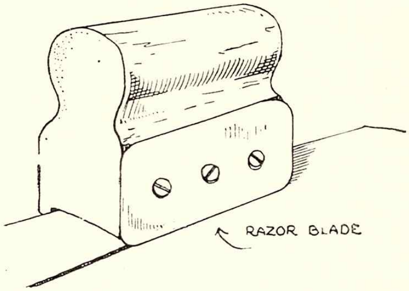


To make an efficient leather stripper from a spokeshave blade, take a block of wood 4in. by 2in. by 6in. Cut out the piece A, B, C. D. A-B should be the width of the spokeshave blade. A-G and B-H are 1½in. G-C and H-D are 1in. A-C and B-D are straight lines. At R and S bore holes for the ends of the blade to fit into. They must fit firmly. E and F are wing screws protruding right through the block, the nut resting on the ends of the blade. By unscrewing or screwing up the bolt the blade will take any thickness of leather. Be sure that the edge of the blade fits about 1-16in. below the level of the wood when screwed right down. To operate, unscrew the nuts, raise the blade and put the strip of leather underneath. Screw up the nuts to the required tightness and pull the leather through. A sharp blade should be used. —J.G.H., Kai Iwi.



LACE CUTTER

An excellent tool for cutting belt lacing or trimming the ends of belts when shortening can be made from a discarded safety razor blade mounted on a block of wood. The block should be curved to fit the fingers, and at one side at the bottom grooved to the width and thickness of lacing required. The blade is then fastened to the block with small wood screws, and the grooved portion of the block will serve as a guide so that the edge of the blade is always parallel, and the lacing will be of equal width along its length. —"Farmer," Southland.



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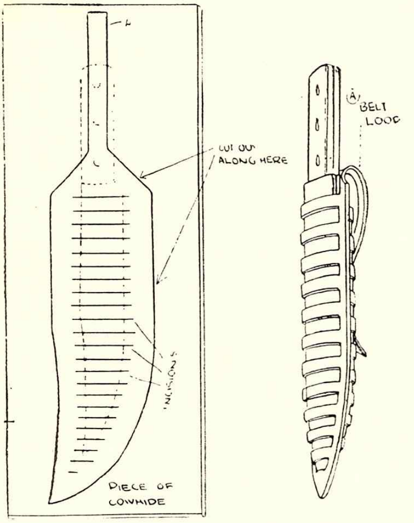
KNIFE SHEATH

To make a knife sheath without sewing, from cured cow hide. First place the knife flat on a piece of the thicker portion of the hide and outline the blade with a pencil. Then cut incisions across the width of the outlined blade making them about one third of an inch longer on each side as shown in the diagram. Now cut this out of the hide leaving a margin of about half an inch outside the incisions, and also a tapered strap of about four or five inches long, above (where the knife handle lay when marking). This is shown in the diagram also. Now cut from a piece of the thickest part of the hide a strip that will cover around the blade of the knife and have a margin of about one third of an inch. Push this (while still around the knife) down through each alternate incision. Withdraw the knife and force a piece of wood cut to the same shape as the knife blade (but slightly larger) in its place. Tuck the strip marked A through one or two of the straps on the back to form the belt loop. Of course, the hide should have been soaked in water first. When finished it can be put out to dry and shrink in the sun.—F.D.W.H., Mount Roskill.

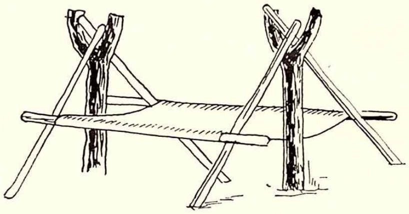


RAWHIDE SHEATH

A good sheath for a knife can be made from a piece of cow hide freshly skinned. First cut a wooden model of the knife that the sheath is to cover, and then fold the hide over it and lace down one side. When it is firmly fixed, let it dry hard, then remove the model and the sheath will keep its shape.—J.T.I., Tolaga Bay.

BUSHMAN'S BED

To make this quickly-constructed camp bed place two forked sticks three feet six inches long upright in the ground six feet apart. Point two light sticks four feet long for each end of the bed and push the points into the ground about three feet each side of the forked sticks, resting the other ends in the forks. Take two light spars six feet six inches long, and making holes in the bottom corners of two chaff bags slip them through, adjust the ends of these side pieces on the slanting sticks at each end, and the bed is complete.—"Kauri," Te Kuiti.



RENEWING OILSKIN COATS

When walking round steep hills I have found that a short oilskin coat keeps one as dry, and is far easier to walk in, than a long one. I found an old oilskin that was considered almost finished, as it did not keep the water out and was badly torn round the bottom, and cut it off about an inch above the knee, and turned up a small hem to stop fraying. I then mixed equal parts of boiled linseed oil and soft soap (I made my soft soap by shredding ordinary household soap and boiling it with sufficient water to make a thin paste), and painted the coat with the hot mixture. I then hung the coat in the sun for an hour or so. The coat has done me years of hard service since, and is still in fair condition and waterproof.—J.G.H., Kai Iwi.

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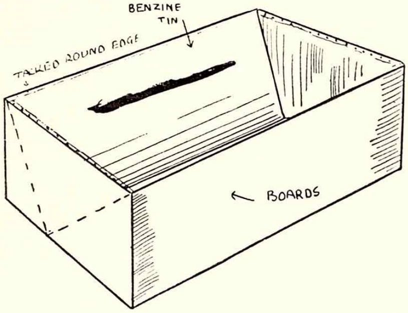
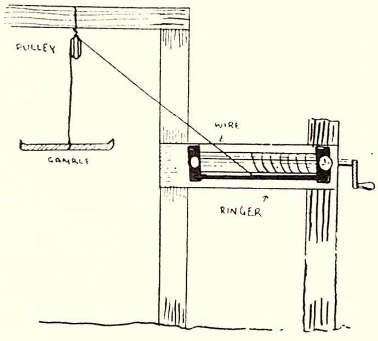
FARMYARD TROUGH

To make this useful trough take two pieces of 8in. x 1in. board the length of the distance between the opposite corners of a benzine tin end. Obtain two other 8in. x 1in. boards two inches longer than the height of the benzine tin. Nail these together in box form. Cut a benzine tin as shown and place the larger half in the wooden frame. After hammering the tin's edge down on to the frame, tack firmly with large-headed tacks. This trough is very useful for feeding hens, ducks, dogs, pet lambs, calves and small pigs. Although easy to clean it is difficult to upset.—F. H., Kai Iwi.



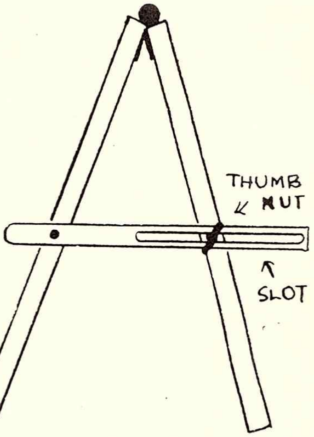
GALLOWS WINDLASS

A simple gallows windlass can be made from an old wringer. a length of small wire cable and a block. The wringer will hold the weight at any desired height without having to tie the cable.—" Farmer." Clydebank



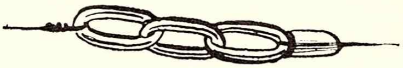
ADJUSTABLE TREE SPACER

This may be adjusted to any width and is very light to handle. The marker is used by walking it down the row, swinging it first on one leg then the other.



"WIRING" TIMBER

The main difficulty experienced when running firewood or posts down a wire to cross a gully is the frequency with which the knot at the lower end breaks. This can be overcome by getting a piece of old chain (heavy preferred) and a piece of ¼in. pipe, each about a foot long. Pass the wire through the pipe above the chain as shown, then join the wires on to the chain. Slide the pipe back over the knot until it rests against the end link of the chain, thus protecting the knot.—T.U., Rakaunui.



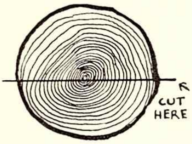
TO BIND ROPE-ENDS

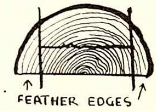
Close a copper pig ring on the ends of leg ropes, etc., and it will prevent unravelling and remain there until the rope is perished. For plough lines, use a galvanised wire-netting clip.—A.B.C., Hawera.

Protect the "Hame" —
INSURE WITH F.A.M.E.

SPLITTING LOGS

A 12-inch log need only be quartered, making four posts. A larger log should be halved, using two entering-wedges.





"Feather-edges" are then split and the remainder will make two or more posts. Wooden wedges save time on knotty logs.—"Constant Reader," Levin

BURNING TREE STUMPS

The easiest way to burn out an old tree stump is to place an old motor tyre round it and light the bottom of this right round the tree. The tyre or two or more if necessary, can be cut at one side so that it can be put in place. The rubber burns for a long time and will set the stump thoroughly alight.—H.D.M., Hakataramea.

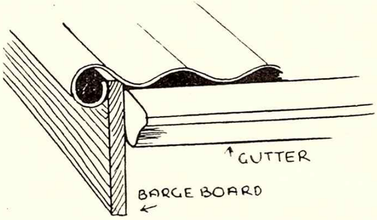
LIGHT BOTTOM OF TYRE RIGHT ROUND

ENLARGING A PULLEY

A pulley can be made larger by binding a rope round the surface the belt runs on. The size of the pulley can be regulated by the thickness of the rope. The rope is bound close and tight and the knot is tied in between the spokes. The rope will stand the wear for years.—E.S.K., Dannevirke.

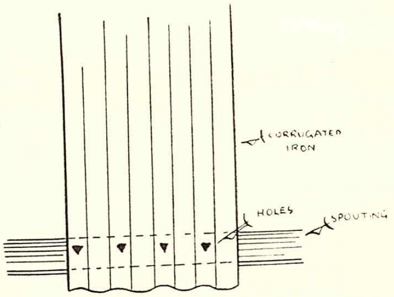
SUBSTITUTE FOR COVER-BOARDS

It is very frequently found that the first part of the woodwork on a building to decay is the cover-boarding along the edges of the gables. Expense can be saved and a better job made if the iron is extended beyond the barge-board and the last corrugation bent round into a smooth roll as shown in the sketch.—J.E.D., Palmerston North.



PROTECTING SPOUTING

A simple way to prevent spouting being broken down by snow is illustrated in the accompanying drawing. Instead of having the spouting out at the lower edge of the iron, put it about two inches under and punch holes in the down corrugation to let water into the spouting. The snow slips off the overhang and the spouting has only the water to carry. (Note.—To do it this way the spouting needs to be fastened before the iron is put on.)—B.L.W., Fairlie.



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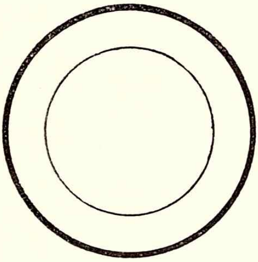
OIL CAN HINT

An old oil can which will not squirt oil can be made as good as new by running the butt end of a pair of pliers around the base of the oil can about one-sixth of an inch from where the sides are fastened on to the bottom, as illustrated. The outer ring represents the outside of the can from the bottom.



The inside one is where the butt end of the pliers is to be run around. This method, although so simple, is effective, for it can be done on the drill itself. I had a can fixed in this manner in March and I have used it regularly since and it has proved very satisfactory.—R.J. E., Oamaru

ECONOMICAL LUBRICATION

If the grease cups of farm machinery are replaced by zinc nipples and the grease gun of the car is used, old engine oil can be used with considerable saving both in time and costs.—A.C.C., Hastings

FARM MAKESHIFTS

(1) When a motor-engine valve spring breaks, remove one piece of the spring and slip a washer over the valve stem, then replace the other half-spring. (2) A spring for a pair of pliers can be made by slipping the ends of the plier handles into a piece of teat claw rubber. (3) A piece of pipe slipped over the end of pipe tongs will help shift a stubborn pipe or nut. (4) A simple way to put wire hoops on a barrel is to fasten one end of the wire to a strong post or tree, then round the barrel to a wire strainer on the other end. Two or three small staples driven in where the wire crosses will keep it tight.—A.R., Awanui North.

PRESERVING HANDLES

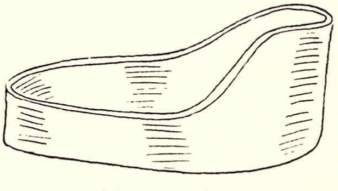
All farm tools with long handles, such as slashers, axes, shovels, hayforks and hoes can be treated with oil if a hole about ¼in. or ½in. in diameter is bored into the end, running straight down the handle to a depth of at least 3 inches. Great care has to be used in boring, for if the tools are not held steady the wobble will snap the bit. Either two people should undertake the task or else a vice should be used. When the holes are bored stand the tools in a dry corner, holes up, and fill them with old oil or kerosene. After the first application, they require only a little oil. A screw put into the hole also is a good idea. The handles stand the weather better, last longer, and become far more pliable and so have less tendency to snap. I have an axe handle done this way and it is years old.—"Constant Reader," Ward

CURE FOR SLIPPING BELTS

To cure trouble with a slipping belt, cut a band of old car tyre tube of the same width as the pulley and stretch it on. If the pulley is very small use a band off a bicycle tube. There is no trouble with the band coming off if the pulleys are in correct line and if the rubber is nicely stretched. The belt will then grip like a chain on sprockets.—E.S.A., Winchmore.

RUBBER POURING SPOUTS

Pouring oil and other liquids from a can may be made easier by attaching a rubber pouring spout. It is made by cutting a rubber band from an inner-tube so that it is wide at one side. When used, the band is snapped round the nozzle and the handle of the can.—H.D.M., Hakataramea



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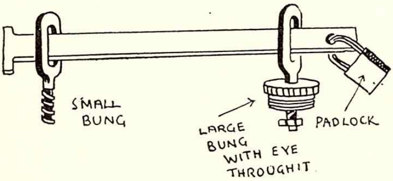
BENZINE LOCK

To those tractor owners who are forced to leave 44-gallon drums of benzine out in paddocks, this simple lock may appeal. Any blacksmith will make it for a small sum. The small bung of the drum is removed and replaced by an eye stud of similar thread. The large bung is drilled through its centre and an eye bolt inserted in the hole, being tightened by a nut underneath. A bar of flat iron, with a collar welded on one end and a small hole at the other, is then passed through the two eyes. The lever of a padlock can then be passed through the small hole and locked, thus preventing any unauthorised person unscrewing the bungs.—"Furrow," Hastings.



STEEL BRIDGE GIRDERS

Old railway irons can be used to make a sturdy foot bridge. Logs are buried on each bank of the creek to be bridged, and the ends of the rails spiked to them. The floor, consisting of 2in. planks, is laid between the rails so that the ends of the planks rest on the lower flanges. When spiking the rails, care must be taken to get them parallel so that the planks can be slipped in place from one end.—A.L.P., Denniston.

REPLACING BROKEN RINGS

When a ring such as is used in a breeching—to which the breeching straps are attached—or the tethering ring of a halter, wears thin or breaks, and the leather is undamaged, it can be repaired immediately and cheaply by taking a bull ring and fitting it in the place.—Handy Andy, Makakaho.

BLACKSMITH'S HINTS

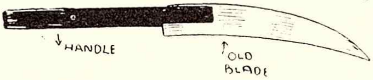
(1) To get the desired heat for welding iron keep some dry sand handy to dip the pieces to be welded into when they are hot. This will give you that little extra heat needed for a good weld without burning. (2) Always give the pieces to be welded a smart rap on the anvil immediately before you stick them. This will clear off any flakes or dirt which often spoil a good weld. (3) "Between the copper and the blue makes the temper ever true," is an old saying among blacksmiths, and it could not be better explained to anyone trying his hand at tempering. (4) Many farmers do not know when to take the steel out of the fire to temper it, so a good rule to follow is—when it is cherry red.—G.F.B., Tamahere.

AN ECONOMICAL HEATER

Required.—A jam tin and some resin or dried sap, preferably from a pine tree, and some sawdust. Melt the resin in the tin and mix with sawdust. When hardened, cut holes near the top of the tin. When a match is applied to the contents it will give a continual heat for hours. I have used this method for melting lead, and also for melting resin and sawdust to make useful fire kindlers.—Vin. McMahon, Mologa, Victoria.

SCYTHE-BLADE SLASHER

Most slasher handles break off just where they enter the iron. When this occurs and an old scythe blade can be procured, the broken handle and old blade can be made into a very useful tool for cutting light hedges, etc. Drill three holes in the thick part of the scythe-blade and screw on to the handle. You will be surprised how well this tool will act in light trimming. No farm or garden should be without one —H.C.S., Richmond.



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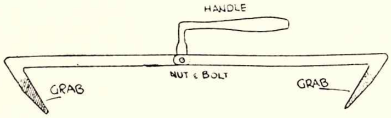
HANDLING BRICKS

This device for handling bricks, if made to carry six bricks at a time, will save a lot of handling. By placing the grab over six bricks and catching hold of the handle, the purchase will hold the bricks very tight, and they can be carried with ease without getting the hands sore.—J.S.I., Wangaehu.

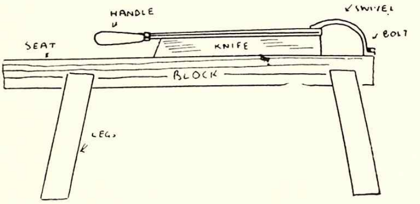


DRILLING HOLES IN STEEL

To drill holes in steel, will sometimes be found very difficult without the right equipment. A device that I have found very effective, is to get two pieces of iron with a hole in each piece. Put the piece of steel in which a hole is required, between the pieces of iron, with holes opposite. Taking a steel punch, give a sharp blow with a hammer. This will drill a perfect hole in the steel.—D.E., Matawai.

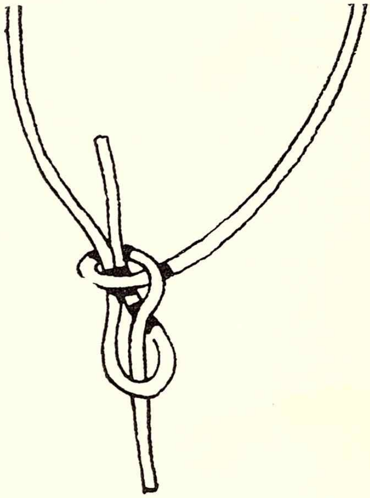
ROOT SLICER

The device illustrated is a boon to sheep and dairy farmers for slicing swedes, mangolds, carrots and cabbages. It is easily constructed. The cutter can be made out of an old discarded hay knife—cut to the shape illustrated. The chopping block should be of the best seasoned timber available.—J.S.I., Marton



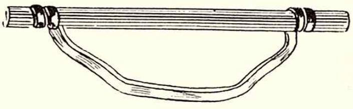
NON-SLIP KNOT

A knot which will not slip under any strain, and yet one which can be readily loosened, is illustrated. This is the best knot which can be used for tying up horses or other stock which are likely to pull back.—C.B.



USES FOR GREENHIDE

A piece of greenhide 5 or 6 feet long is a handy thing to carry in one's pocket. If you have not a pipe wrench, tie the hide on to the pipe as illustrated and twitch the loop round the pipe with a stick in whichever direction you wish to turn the thread. Another use is to tighten or slacken the grease cups on the discs (in some cases they are very awkward to get at). Take the middle of the hide and put it round the cup twice, then pull with one end and hold with the other. Then there are other uses such as tying up a sheep by the legs, tying a dog, or a gate, and so on.—" Greenhorn," Waihola.



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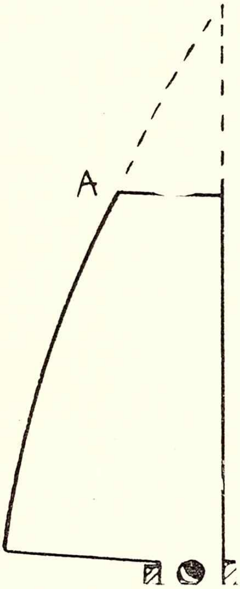
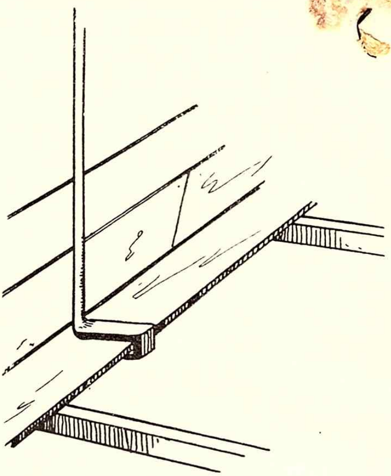
OSMOND'S WORLD FAMED REMEDIES.

GRUBBER FROM SHEARS

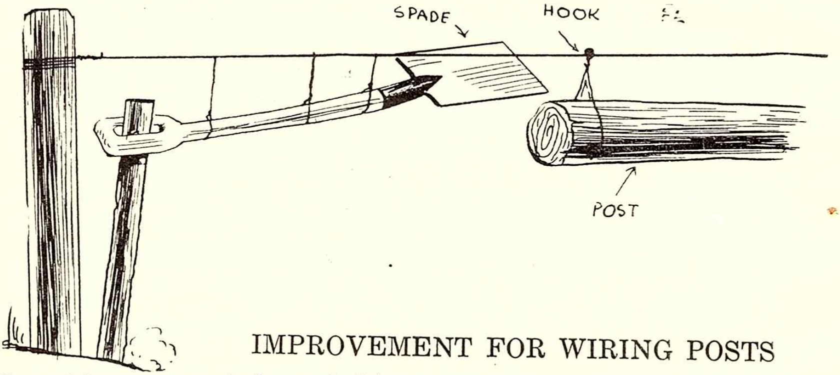
This type of thistle grubber is easily made by taking an old shear blade and, with a hack saw, cutting through from the point A, as illustrated. On the grip drill two holes and screw on to an old broom handle on a suitably-shaped stick. "Farm Hand," Akaroa.



TAKING UP FLOORING



By bending a piece of ½in. by 2in. flat steel into a U-shape and welding it to a length of ¾in. iron rod you have an excellent tool for removing old flooring. In use, the bar is slipped over a floorboard near a joist and the handle is pulled toward the workman. This prises the board away from the joist, and at the same time tends to pull the tongue from the groove of the adjoining board without splitting it.—"Rustus," Nuhaka.



IMPROVEMENT FOR WIRING POSTS

For wiring posts and firewood this is a vast improvement on the usual method of bursting the staples or hooks out by means of a knot or other gadget on the delivery end of the wire. As there is little or no shock when the load leaves the wire, the annoyance of a constantly breaking wire is avoided. The action is quite positive as the spade blade keeps its relative position to the wire if the wire should swing or sag. The longer the handle of the spade the greater the number of posts that can be shot at a time without congestion.—R.G.B., Aniseed Valley.

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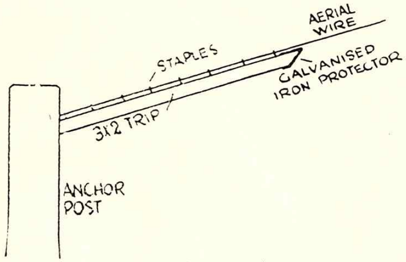
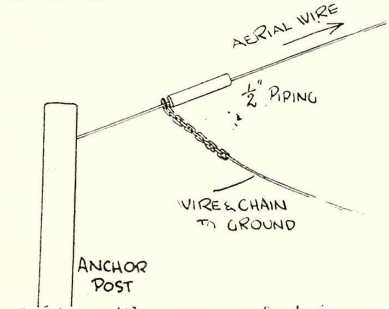
A STAPLE "TRIP"

When taking wood from a hillside by aerial wire, this idea will always work efficiently in releasing the wood at the bottom. Take a piece of 3in. by 2in. timber about 16ft. long. Make a short taper at one end, and cover it with a small piece of galvanised iron and nail into position. Staple the 3in. by 2in. securely under the wire and butt the end against the anchor post. I have used this idea for years, and it has never failed me. I recommend white pine for the "trip."—24/763, Marlborough.



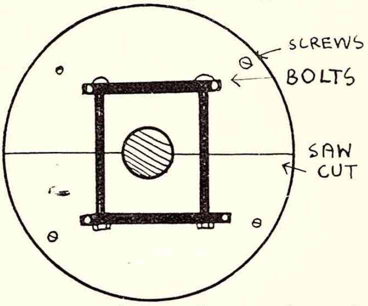
STAPLE EXTRACTOR

The difficulty of extracting the staples from posts and firewood without breaking the aerial wire with the jar can be overcome as follows:—Drive a stake in the ground six or eight yards from the anchor post and right under the aerial wire. Attach to this a piece of wire with a piece of chain on the other end. Slip over the aerial wire a six inch piece of quarter or half-inch piping, with a link of the chain behind that. It works perfectly. Do not have the bottom wire too tight. It should fly backward and forward on the wire. —H.A., Tuatapere



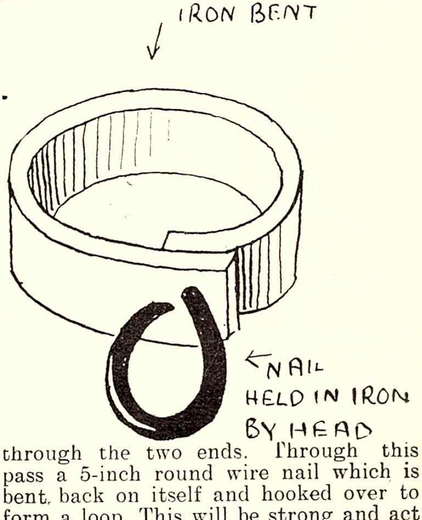
WOODEN SPLIT PULLEY

A split pulley is frequently required on the farm. Recently I made a most satisfactory one from wood which is 12in. in diameter with a 2in. face. Material used, two pieces of 12 x 1 kauri board screwed together (the grain of one at right angles to the other), four bolts, 5in. by ⅜in.; four bolts, 6in. by ⅜in., and four pieces of wood 5in. long by 1in. square. The diagram will show how and where the bolts and wood are used to make the pulley. —"Pulley," Port Albert.



HOME-MADE SWIVELS

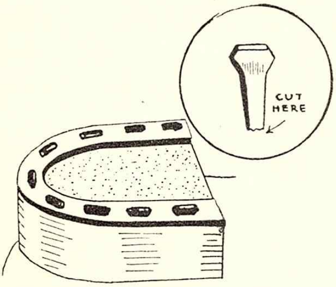
Swivels, which are frequently required about the farm for tethering animals, can be quickly made as follow:—Bend a few inches of 1-8in. x ⅜in. iron into a circle and bore a hole through the two ends. Through this pass a 5-inch round wire nail which is bent back on itself and hooked over to form a loop. This will be strong and act as well as a bought swivel.—W. Coupe.



Waging War on Stock Enemies, With—
OSMOND'S WORLD FAMOUS REMEDIES.

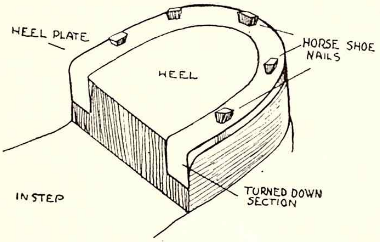
HEELS FOR HILLS

Those who do a great amount of walking on rough country can find greater ease in descending a steep face if the nails fastening the heel plates on the usual heavy boots are removed and horseshoe nails cut off on a sharp edge put in their place. The heads of these protrude and make a very good gripping surface. These nails are very easily cut off to the required length by placing them on a sharp edge of iron such as the edge found on the back of an axe, and a few sharp blows with a hammer will leave a clean, sharp edge on them.—"Helps," Mount Roskill.



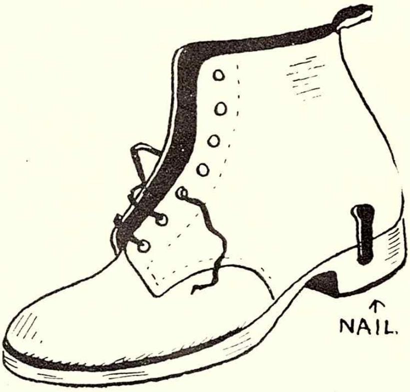
IMPROVED HEEL-PLATES

After new boots have been worn for some time the leather of the heel near the instep becomes worn and the points of the heel plates protrude, and are very liable to trip one when climbing over fences and walking over bidi-bidi or scrub country. To remedy this, take off the heel plates and draw out the points until each is about $\frac{1}{2}$in. longer than the original length. Bend these at right angles and replace the plates on the heels with cut-off horseshoe nails. Have the bent portions pointing in towards the insteps of the boots. No heating is required to draw out the points.—F.H., Kai Iwi.



PREVENT WALKING-OVER

I have badly shaped feet and when working on the farm I run the side of the heel of my boot over. The only way I have found of stopping it is to take a large horseshoe nail two and a-half inches in length. Nearly flatten the head and drive it in the heel half way up as shown in the illustration and then bend it up to stop the side of the heel pushing out.—C.N., Atapo



WARPED STUDS

Most farmers have had the experience of building outhouses, etc., with scrap pieces of timber and iron, taking the opportunity to use up anything available on the farm. The usual thing, of course, is a lot of twisted and warped studs, plates and rafters. To straighten these let a saw-cut into the back of the timber and in the centre of the warp, and drive in a small wooden wedge just large enough to straighten the timber. The depth and number of saw-cuts and size of wedges are governed by the size and condition of the timber. A nail, angle-driven, will secure the wedge and restore the strength to the timber.—T.D.R., Motueka.

GOOD MORTAR

A good mortar for brick walls, paths, etc., not affected by frost and variations in temperature is:—To half a bushel of unslaked lime add 1$\frac{1}{2}$ bushels of sharp sand. Then mix $\frac{1}{2}$lb. alum with $\frac{1}{2}$ pint of linseed oil separately and add this to the mortar. Use the mortar as hot as possible.—X., Takaka.

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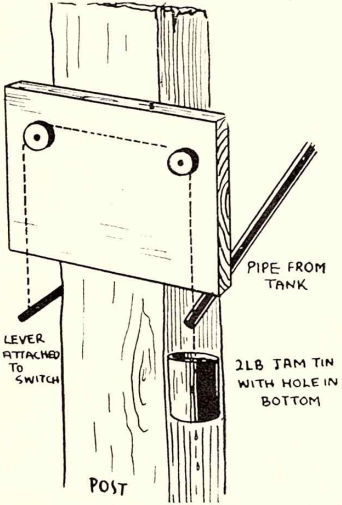
PUMP CONTROL

If the water-tank is situated near the motor switch, run a half-inch pipe from the top of the tank to the pole, just above the switch. Then put a small chain from the switch upwards over two pulleys and attach to the end a two-pound jam-tin, which is directly under the water-pipe. This must be worked so that when the switch is pulled down it pulls the water-tin right up under the pipe outlet. Put a small nail hole in the bottom of the tin, so that the water drips out ready for the next time. The switch arm may have to be lengthened to, say, 6in. to give the necessary leverage.—J.R.B., Eltham

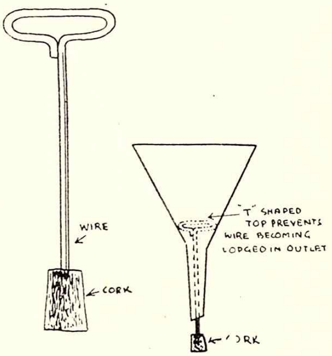


BOTTLE LANTERN

A useful lantern can quickly be made by cutting the bottom off a clear bottle. If you have not a bottle cutter, soak a piece of wool in kerosene, then tie round the bottle near the bottom. Set fire to the wool, and as soon as it is burnt, dip the bottle in cold water and the bottom will fall off. Next take a piece of plain wire about 40 inches long. A rabbitskin wire is the right length and shape. Place the bent wire over the bottle and tie with thin wire or string to keep in place. By leaving the wire projecting below the neck of the bottle, it can be pushed into the ground for a stand. Drop a candle into the bottle and it is ready for use—R.T.H., Ratanui.

OIL INDICATOR

An oil regulator can be made from an ordinary funnel used for filling kerosene lamps. Just below the outlet of the funnel neck in the illustration is a little cork. This is attached to a wire extending through the funnel neck. The wire should first have been shaped like a letter T, and placed in position before the cork is fastened to it. The crossbar of the wire is made broad enough to keep it from going down into the neck, except far enough to allow the cork to hang a quarter of an inch below the funnel spout. This allows free passage for the oil while filling. When the can or lamp is filled to the right point, the oil will float the cork up to the lower end of the funnel, thus partially closing the outlet, and indicating that it is time to stop pouring.—L.J.C., Palmerston North



KEROSENE TORCH

Take an old kerosene pump and remove the plunger and valve by melting the solder. Then replace cap and solder in place, also solder up the hole in the centre. Cut off the spout ½in. from the base and fit with a cork. This is the filling hole. Make a plug of wood for the other end of the pump and fit a thin, foot length, of pipe through the plug. The wick consists of a piece of old rope or towel, which is advanced by means of a slot sawn or filed in the pipe.—N.I.H., Takaka.

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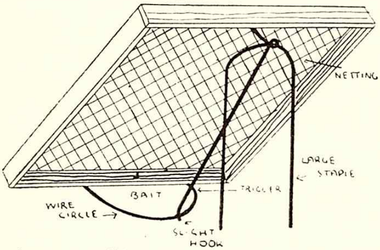
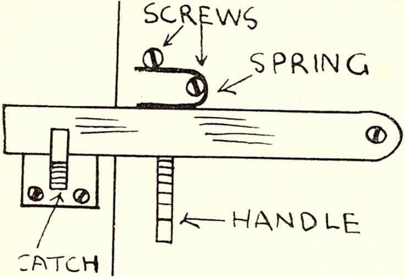
A HAWK TRAP

A hawk trap will be found most useful on farms which are troubled at lambing time by the hawks. A most efficient one can be made as follows.—Make a frame from four stout fencing battens and cover this with two-inch netting. Bend a length of number eight wire about 5ft. long into the shape of a staple which will then be about 2ft. 6in. high. Place the points of this in the ground. Now twist a piece of wire round the curved part of this to form a trigger as illustrated. The edge of the frame should be raised and supported by the trigger as shown. The lower long end of the trigger should be slightly curved to hold in the wire half-circle attached to the batten resting on the ground. A sheep's head should be placed in this circle as bait. The hawk walks under the frame and treads on the circle of wire; this immediately lets free the bottom of the trigger, which flies outwards and lets down the frame. I have caught many hawks in this simple trap. — F.H., Koihoi.



SPRING DOOR LATCH

A breaker spring, such as is used in all car distributors, will cause the ordinary barn-door latch to act quickly. The spring is held in tension above the latch by two screws driven into the door as shown.—E.P., Longburn.

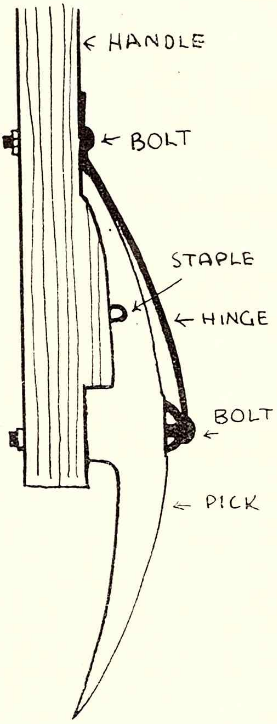


BURNING-OFF TORCH

Cut a one-inch hole in the lid of a small coffee tin. Take a piece of flat tin about 4in. x 8in., roll into a pipe and solder the seam. Fit this into the hole in the lid so that it touches the bottom of the tin and solder to the lid. Cut slits in the lower end to allow the fuel to reach the wick. A piece of towel rolled to fit the pipe makes a good wick.—W.T., Cambridge.

CROWBAR FROM PICK

A very efficient crowbar can be made from an old double-ended pick head, a large size gate hinge and a stout bar of manuka or similar wood The diagram shows how these are utilised and held together by two stout bolts. This tool will be found most useful when sinking post holes.—E.R., Waiomatatini.



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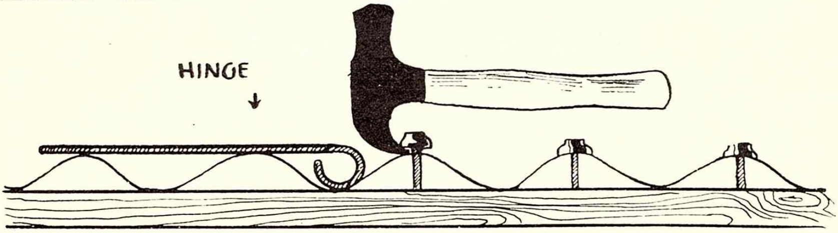
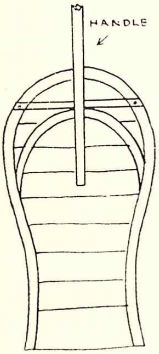
REMOVING ROOFING IRON

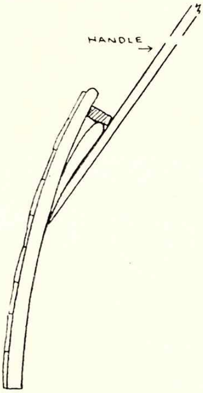
To remove corrugated iron from a building without damaging the iron, take an old gate hinge and place it as illustrated. Put the claw of the hammer under the lead-head nail and then draw out the nail, using the hinge as a fulcrum.—S.W.M., Tikokino.



TURNING HOPS

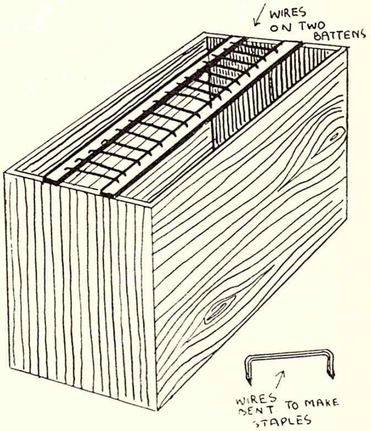
Instead of turning hops, as most people do, with the feet, use this improvised shovel. It is made from an old chair back with its legs sprung apart, and thin boards fastened to the outer surface with screws. It will be found a great labour-saving device for turning or moving hops in the kiln. The handle is bolted with $\frac{1}{4}$in. bolts to the cross-bar and the centre of the shovel.—"Lucerne," Motueka.





CORN SHELLER

Get a benzine case without a lid, and also 2 x 1 battens the length of the box. Nail these on top, as shown in sketch, two inches apart. Get some fencing wire and cut into lengths of about $3\frac{1}{2}$ inches. Bend the ends as shown and drive them into the battens. By rubbing corn cobs along these it is surprising how quickly the box can be filled.—X., Takaka.



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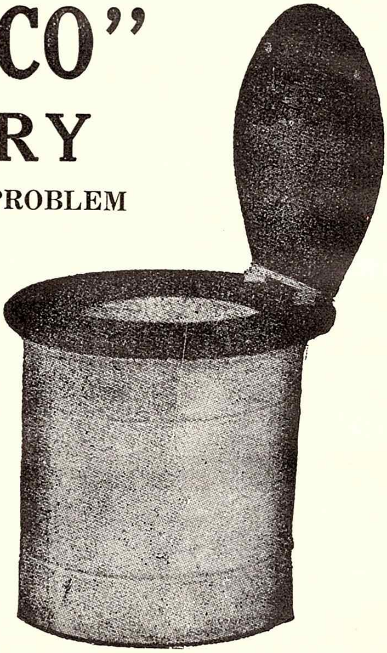

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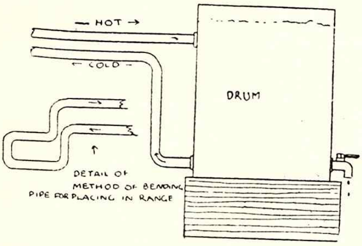
CHAPTER XI.

ABOUT THE HOUSE

CAMP HOT-WATER SYSTEM

A constant supply of hot water can be provided in a camp or whare cookhouse, without the inconvenience of having a can always on the fire, if the following is installed. Place a small iron drum, or even a small barrel, on a stand near the fireplace, and from this lead a 1½ inch pipe from the bottom through the fire and return again to a point two or three inches below the top edge of the drum or barrel. The pipe will require to be bent (after filling with dry sand and heating) or be fitted with elbow joints, and the pipes can be taken either underneath the fire, along the back, or can be used as firebars on which pots, kettles, etc., can be stood. It will be found that the water will circulate through the pipes on the thermo-syphon system, and keep the supply in the reservoir hot at all times. The tap outlet from the reservoir should be placed half-way up the side to ensure the water drawn off always being hot. It may, however, be put near the bottom, in which case the supply is larger, but will be inclined to be cold immediately following the replenishment of the supply while that at the top is still hot. In half an hour a six gallon reservoir will be near boiling point. — L.R.U.. Kotemaori, Hawke's Bay.

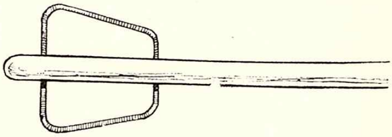


KITCHEN BINS

Kitchen drawers to contain flour, sugar, oatmeal, raisins, currants, etc., which will be found very useful and convenient, can be made from three benzine boxes and four benzine tins. Cut out the side of each tin, place the three boxes on top of each other and nail them together. Get four pieces of 2in. x 2in. to form the legs. Slide the four tins into the two top boxes, coat the fronts of the tins with white enamel and stain the woodwork with oak varnish stain. Thus you have a handsome piece of useful and cheap furniture in the kitchen.—G.W.F., Inglewood, Taranaki.

IMPROVED WASHING STICK

Drill two holes in a strong broomstick. Now, as shown in the illustration, bend and insert a length of heavy galvanised wire. Clothes will not slip off the stick when turned, and there is no danger of tearing them when removing them from the boiler.—A.S., Mata.



PICKLING TUB

A practical receptacle for salting meat, etc., on the farm, is a large size drain pipe, with the bottom cemented up. This keeps the meat cool in the hottest weather. A smaller pipe done in the same way is useful for putting beans down for winter use.—Takaka.

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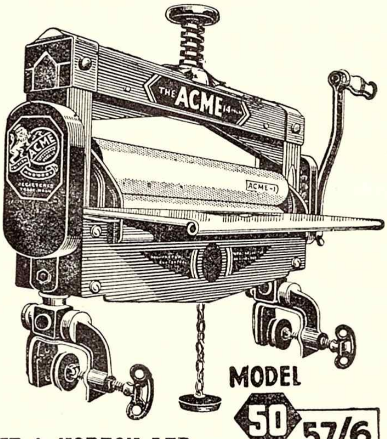

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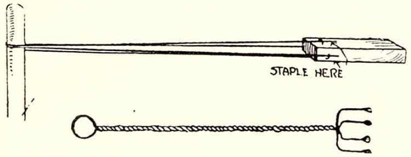
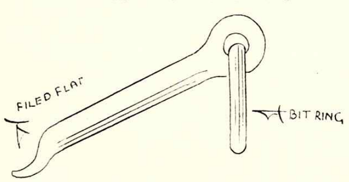
TOASTING FORK

Drive a round stake, about the thickness of a broom handle, firmly into the ground, or grip it in the vice. Cut two lengths of No. 11 or No. 12 wire (not steel), each 5ft. long, and bend each length in half. Staple the ends securely to a piece of 2in. x 2in. wood, about 1ft. long. Staple one wire end to each side of the wood. Place the looped wires over the stake and turn the block of wood in your hands, keeping a steady strain on the wires by pulling back on the 2in. x 2in. block. You will find in this way you can make the twist even for the handle of the fork. When the wires are twisted to the length required, cut the four wires where they are stapled to the block and bend them to make the business-end of the fork. You will need to cut the prongs to an even length when you have bent them to the right shape. The last procedure is to hammer the tips on a stone or anvil, to make them sharp, and to file the edges smooth. Be careful not to hammer the tips too much, or you will have a spear that will not let go of the toast readily.—N.H.R., Pakotai.



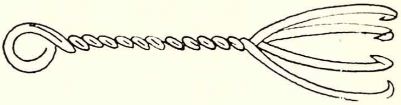
TIN-OPENER

An efficient opener for small tins with push-in lids can be made from a worn-out horse bit. Cut the bit as shown and file it flat on the inside to give it a good grip under the lid of the tin. The rein ring serves as a convenient hanger.—E.R.H., Hakaru



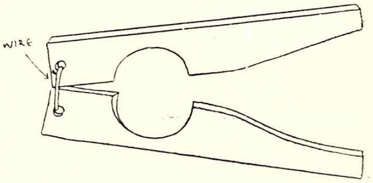
REMOVING CORKS

The sketch depicts an easily-made gadget for removing corks from inside bottles. Take two pieces of No. 12 steel fencing wire each one yard long. Twist into the illustrated shape. To remove the cork hold the legs together and push into the bottle. Shake the cork into the middle and the hooks will hold it fast so that it can easily be withdrawn.—J.S., Collingwood



JAM JAR CLAMP

Illustrated is a pattern of a clamp used to tighten lids of Mason preserve jars. It makes them very tight, far more so than by hand. Get someone to hold the jar while another screws the lid tight. It is easy to make. Take a piece of stout board from a packing case about ¾in. thick and shape as illustrated.—M.M.P., Tangitere.



MENDING LEAKY POTS

The following method can be used to repair enamel utensils or galvanised baths. First take piece of clay and make it quite plastic, taking care that it is free from moisture. Next clean the article round the hole, scraping away all enamel or galvanised deposit, making sure it is also free from rust. Take the clay and make a dint in it, rather larger than the hole, and in the shape of a small bolt head. Smear both sides of the hole with flux or killed spirits of salts. Place the clay on the article with the dint over the hole and melt the solder into the hole until a small knob or lump is formed inside. When cold the job is finished.—H.D.M., Haka

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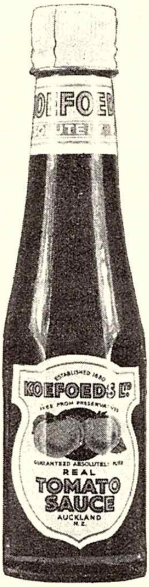

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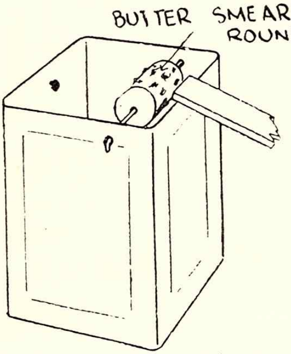
THREE HOME-MADE MOUSE TRAPS

(1) Make holes through the lid and bottom of a baking powder tin so that the tin spins easily when threaded on a piece of wire. Then fit this tin in a kerosene tin so that it is just below the top. A piece of board is rested against the kerosene tin so that the end is directly above the baking powder tin and about an inch from it. Butter is smeared all round the tin and the trap is ready. A mouse jumps on the tin and it spins round under its weight, tipping it into the kerosene tin. This trap has the advantage of always being set, no matter how many mice are caught.

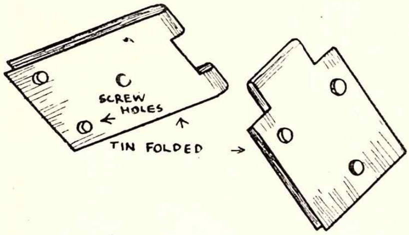


(2) A pineapple tin is placed upside down on an old dish and a small three-cornered piece of wood with a piece of cheese attached is placed under the edge so that the cheese is up in the air inside the tin. When the mouse nibbles the bait the tin slips over the stick. Although extremely simple, this trap rarely fails.

(3) Fill a half kerosene tin or similar vessel with water so that the level is about 2½in. from the top. Sprinkle a handful of bran or chaff on the water and place several small pieces of cheese on it. A piece of bread is placed over the edge and the trap is set. The mice jump on to the seemingly solid surface after the bait.

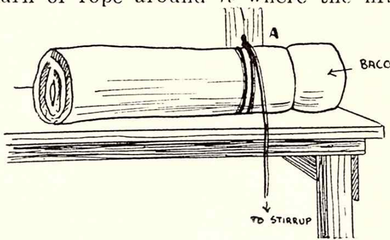
SIMPLE HINGES

Substantial and long-wearing hinges for gates or doors can be made from a piece of strong tin cut into two strips, sufficiently substantial to hold the door or gate. Fold the tin over lengthways, and cut out a square in the centre of the folded edge. Then cut the other strip, taking two pieces off to make it fit into the space previously cut. All that is further needed is a nail to hold the two pieces together, and screws to fix the hinges on to the door and frame.—E.W., Wainake.



ROLLING BACON

As an aid in rolling bacon, and one which enables the operator to have the use of both his hands to tie the strings, take a length of good smooth plowline, or wire clothes line, and fasten to the wall stud of the back of the bench as at A. Roll flitch roughly and take a turn of rope around it where the first string is to be tied, taking end of rope down over front edge of bench B, and fastening to the end of on old stirrup-iron at a convenient height from the ground so that, when the foot is placed in the stirrup and pressure applied, the roll is tightly drawn together. This leaves both hands free to tie the string.—F.S., Riverside.



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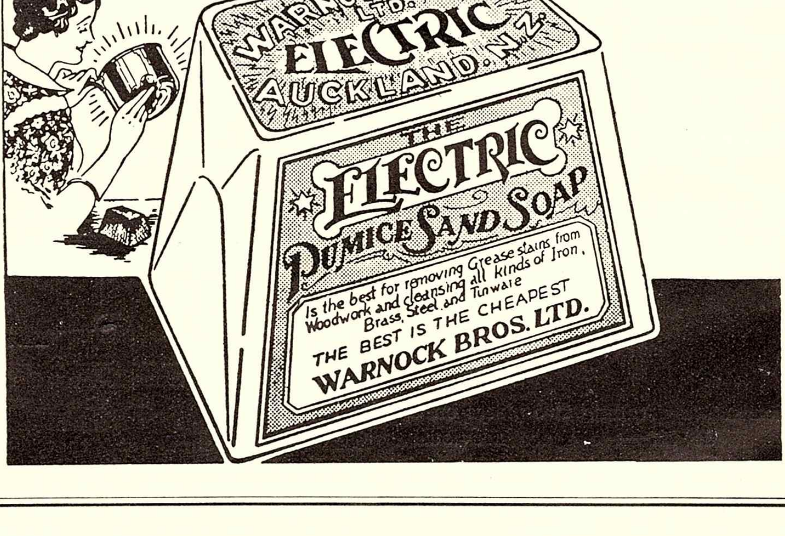
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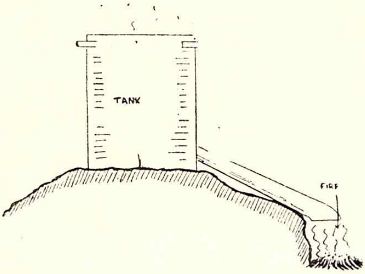
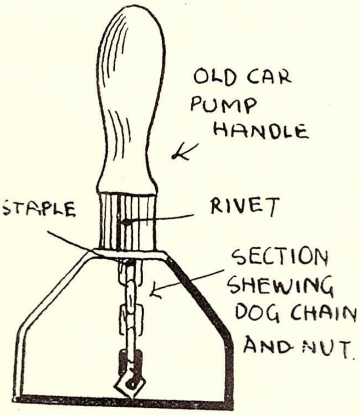
SMOKING THE BACON

Failure in smoking bacon is usually the result of too much heat. To smoke successfully the smoke must be cold and the device shown is a simple and practical solution. The materials are easily secured. Any old tank will do; even if the top part has gone it can be trimmed and turned upside down. The chute can be made of either corrugated or flat iron or old oil drums and must not be less than 12 feet long. An advantage is to have the tank on a knob as shown, in preference to a hillside; it can then be turned to suit the wind. A slow, smoky fire should be aimed at. Willow sawdust is excellent. Cover the top with bags and smoke according to taste.—Bushie, Frasertown



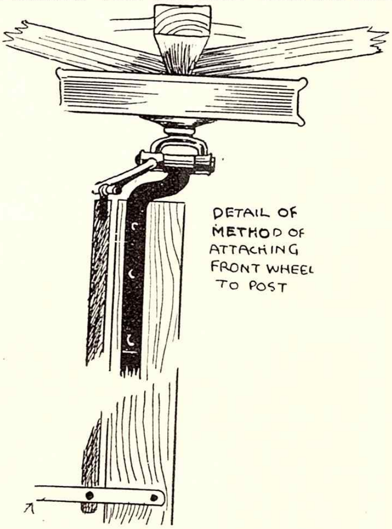
HOME-MADE BELL

A resonant and tuneful bell can be made at little cost where one has the bowl of an old discarded separator on hand. Fit a wooden handle into the " neck " of the bowl and rivet firmly. Inside, staple a short length of light chain to the wooden handle and from the end of this suspend a nut to serve as a clapper. This makes a bell quite as serviceable as any that can be bought.—K.T., Porangahau.



REVOLVING CLOTHES LINE

Here is a revolving clothes line that is easy to make. Get an old front wheel off any motor-car and bolt four pieces of 3 by 2, 10ft. long, across, in such a manner that the outer ends are about 18in. higher than the wheel (when the wheel is lying flat), and so that when the clothes wire is stretched taut the wire will take the weight. Now bolt the front axle on to a post about 10ft. high and put the wheel in place on its side. Then bolt a piece of 3 by 2 to the steering arm, and attach to the lever. By working the lever the wheel will cant to one side, making it easy to put the clothes on and take them off, and to have it level when drying. In the sketch a wooden beam, adapted to take the place of a steering rod, is attached to the steering arm, and a wooden lever is bolted to the beam to enable the operator to cant the line to either side. —Easy Monday, Pahiatua



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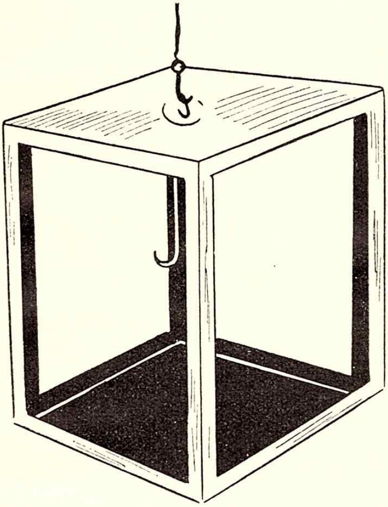
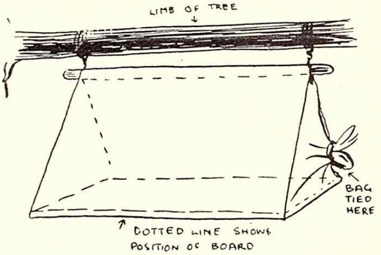
MEAT SAFES

The enclosed sketch illustrates a meat safe made from a kerosene tin. Take a tin and cut out each side, leaving only the corner pieces. These are bent over and hammered round so that there are no sharp edges. Next a wire hook is put through a hole in the top, to hang the meat on. Make a cover from butter-muslin to fit over the safe, leaving both ends open Attach tapes to the top and bottom of the cover (about 3in. from the ends). Draw the cover over the safe from the bottom Tie it round the wire handle and also under the safe. This safe costs practically nothing and is made in a few minutes.—J.S., Rockville.

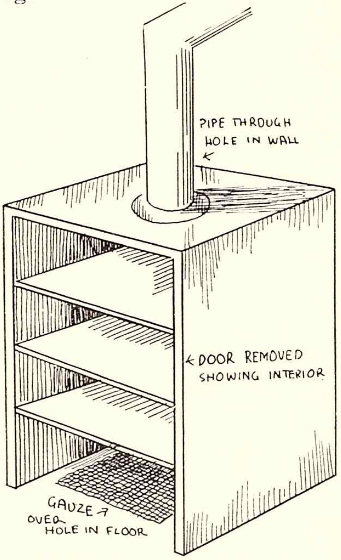


A handy bag safe can be made quickly with a light scrim bag and a board in the manner shown in the diagram. This will keep flies out and turn rain. The board is placed in the bag or sack long-wise and a stick the same length as the board put in the bag exactly above. Strings are then attached to the ends of the stick and the whole hung up in a shady place. To close the safe simply tie up the mouth of the bag. The weight of the board serves to keep it in position and gives the safe the shape to turn rain. The lighter and more open material in the bag or sack the better it will allow air to circulate through the safe.—F.D.W.H., Mt. Roskill.



Make the walls and door of the safe solid. No bottom is needed. Saw a fair-sized hole in the floor of your kitchen or dairy, and tack a piece of gauze over the opening. The safe is placed over this and made fast to the floor.

Make a similar hole in the top of the safe and cover with gauze, or better still fix a piece of pipe on to go up through the roof or with an elbow to allow it to go through the wall. Cover the outside end of this with gauze. A strong cool draught will flow up through the safe which should have shelves made of narrow battens. This will keep cool in the hottest weather.—"Cocky's Wife" Enfield



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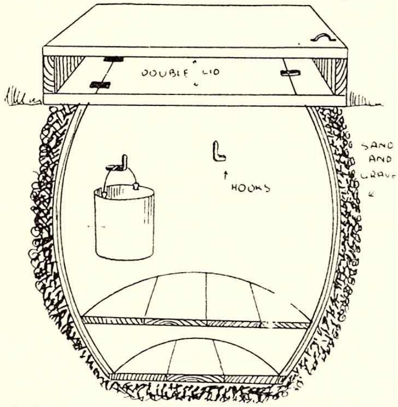
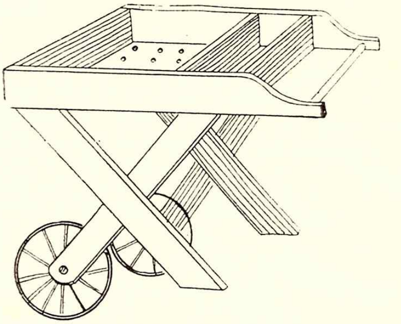
FOOD COOLER

A very efficient cooler can be made on the farm by sinking a large barrel in the ground. A shady spot should be chosen. Fill in around the barrel with small stones, gravel and sand, which should be regularly dampened in order to aid in lowering the temperature. Construct a box around and above the top of the barrel and bank up with solid earth, preferably clay. This drains off the water when it rains. It also makes the bottom of the barrel lower down from the ground surface, which further promotes coolness as the coldest air graduates to the lowest point. Next shape a light, inner lid to place on top of barrel, and then make a strong hinged lid for the box. This box, with lids, prevents any soil or rubbish from falling in to the cooler when it is opened.—W.J.H., Te Kuiti



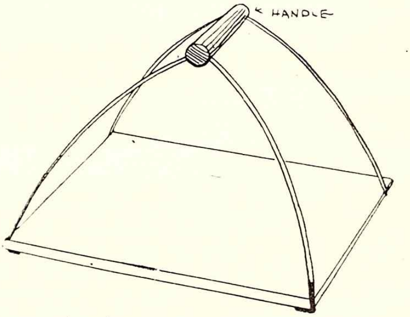
CLOTHES TROLLEY

This trolley, which the housewife will find most convenient for taking clothes to the line on washing day, can be made from a large packing case and two old perambulator wheels The axle is the only article to be bought. Buy a length of round iron from a blacksmith and get him to put a thread on each end. Shape two long boards for the sides as in the sketch, and when these are joined with two shorter pieces to make a shallow box connect the ends of the shaped pieces with part of an old broom handle. The large compartment, which has holes drilled in the floor to let the water out, is for the clothes, and the smaller one for pegs. Crossed legs are fitted on either side, and the wheels are attached to the ends of the pair which come from the back, or handle end. A length of galvanised piping, or a long piece of wood with a hole bored through the centre, keeps the wheels in their place on the axle, and a nut on each end secures them on the other side.—Janice, Ermington, N.S.W.



WOOD CARRIER

Take two lengths—each about 3 feet—of hoop iron (such as is used around bundles of wool packs), and attach the ends to the end of a benzine box, in the manner illustrated. This makes a very suitable carrier for wood for the stove. It can be left on the hearth, thus doing away with a wood box. With two of these wood carriers more wood can be carried than one could put in a wheelbarrow —L.R.W. Ruakituri.



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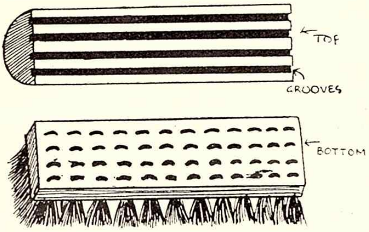
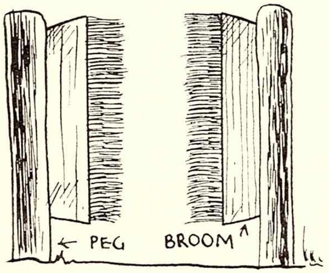
HORSEHAIR BROOM

A very good broom for either the house or the wool floor can be made from horsehair. A piece of inch board is cut to the required length—usually about 1ft. 3in.—and marked out. Bore four rows of $\frac{3}{8}$in. or $\frac{1}{2}$in. holes about $\frac{1}{2}$in. apart along the length of it. Double over a wire hook sufficient horsehair to tightly fill these holes and pull it through. One wisp to each two holes. Pull the hair down tight. Now use a piece of 3in. by 2in. of the same length and cut grooves in this, which will be exactly over each of the rows of holes. This can be done with a saw and chisel. Clamp this over the top of the rows of hair and screw down. Bore an inch hole for handle, round off the edges, and trim the hair level. A little glue poured on the wisps before putting on the cover board makes a good job.—F.D.W.H., Mt. Roskill.



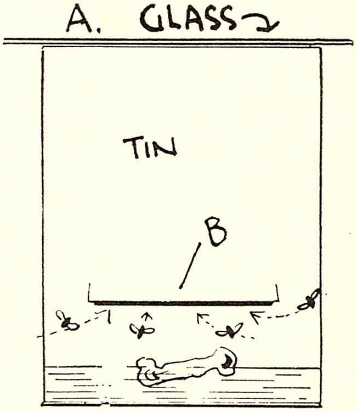
BOOT CLEANER

Drive in two pegs a suitable distance apart and attach an old yard-broom to the inside of each. Both sides of a boot may be cleaned at once with this scraper.—"Interested," Sanson.



A FLY TRAP

A simple blow-fly trap that will catch as many flies as the expensive bought traps, can be made as follows:—Cut the top out of a kerosene tin and cover with a sheet of glass (as at A). On each side of the tin, and about six inches from the bottom cut (as at B). This allows you to lift the cut edge out and slightly up to allow sufficient space for the flies to enter. Pour water into the tin until about four inches deep, and then place some decayed meat in the water. The flies, attracted by the smell, find their way in through the louvre (B), and later, in an attempt to get out, fly to the light at the top of the tin. They eventually fall to the bottom and drown.—M.P., Tokomaru Bay.



RAPID CABBAGE CUTTER

A shovel which has become worn at the mouth, may be converted into a useful cabbage-cutting implement that will save much time. Where the area under cabbages is large, it will pay even to "waste" a new shovel for the purpose. A triangular piece is cut out of the point of the blade, and the V-shaped edge ground sharp. One stroke of the shovel, with the notch aimed at the stalk, and the cabbage is severed from its stump ready to be thrown into the cart.—J.V.R., Sydney, New South Wales.

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